

Section-1: How to approach a survey? مضاف بالكامل من السكاشن

Definition of a survey

- ⊙ It is a **planned** research for **data collection**.
- ⊙ Study the **characteristics** of certain health event **among certain population** within limited period of time.
- ⊙ **What is a research?** It is a systematic investigation of an event to provide a generalizable knowledge.
- ⊙ Survey is usually a **synonymous to a cross-sectional** study design.

Research problem (FINER):

- | | |
|--------------------|-----------------------|
| ⊙ Feasible. | ⊙ Interesting. |
| ⊙ Novel. | ⊙ Ethical. |
| ⊙ Relevant. | |

Reviewing the literature

⊙ Sources of literature:

- | | |
|-----------------------------|----------------------|
| ① Books | ② Journals |
| ③ Magazines | ④ News papers |
| ⑤ Online Databases | ⑥ Respected websites |
| ⑦ Multimedia (audio/visual) | |

Constructing hypotheses

- ⊙ The study question is preferred not to be answered in Yes/No (Ex., Is treatment A effective?)
- ⊙ Hypothesis is placed in the paper or thesis **before the study objectives** (aim of work) **or with it**.
- ⊙ To be complete a hypothesis must include three components:
 - ◇ The variables
 - ◇ The population
 - ◇ The relationship between the variable

**Example : Assessment of nutritional status of Primary School children in Tanta,
Gharbia Governorate.**

■ Study questions :

- ① What are the current nutritional status and dietary habits among primary school children?
- ② What are the factors affecting nutritional status?

■ Study Hypothesis :

- ⊙ Malnutrition, is highly prevalent among Primary School Children (6-12 years) due to bad dietary habits. (the suitable study design is cross- sectional).
- ⊙ Malnutrition (**The variable**), is highly prevalent among Primary School Children (**population**) (6-12 years) due to bad dietary habits and low intake (**relationship between the variables**)

**Example : A study of some risk factors of neonatal jaundice in Kafr Elsheikh
health center in Kafr Elsheikh Governorate.**

■ Study questions :

- ① What is the incidence of neonatal jaundice?
- ② What are the risk factors that can be related to neonatal jaundice? (Hi-Q)

■ Study Hypothesis :

- ☞ Although the incidence of neonatal jaundice could be high but the pathological one is quite low.
- ☞ Some risk factors of severe neonatal jaundice are preventable.

Scientific writing

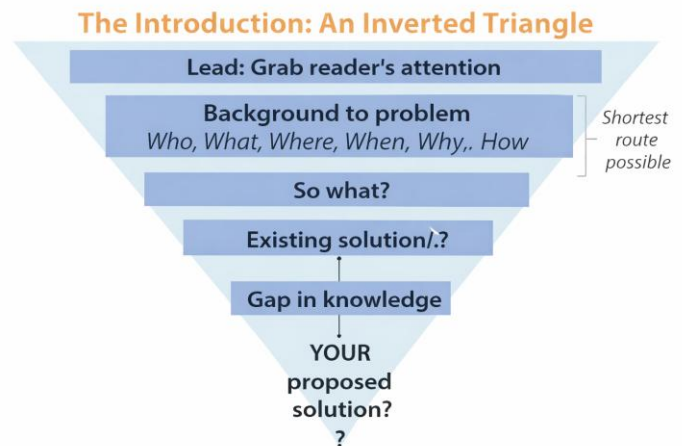
Template for the survey, research, thesis :

- | | |
|-----------------------------|-------------------------|
| 1) Title | 2) Authors +Supervisors |
| 3) Abstract | 4) Introduction |
| 5) Aim of work (objectives) | 6) Review of Literature |

- 7) Subjects and Methods
- 9) Discussion
- 11) Recommendations
- 13) References
- 15) Arabic Summary

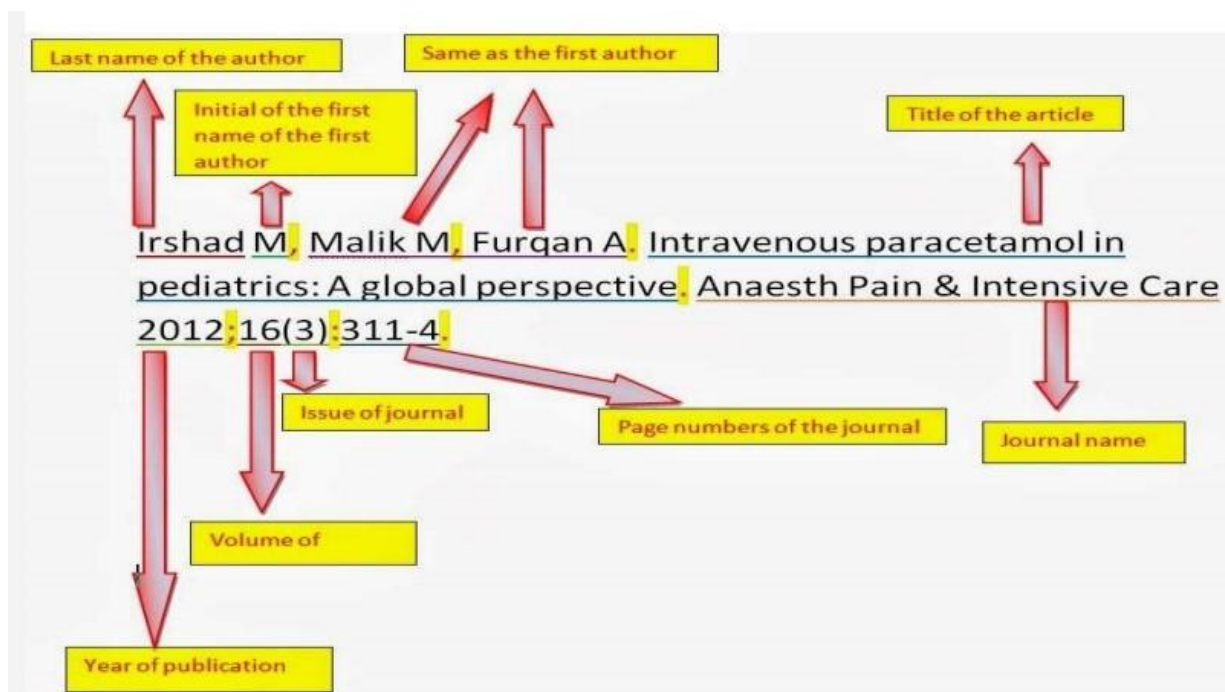
- 8) Results
- 10) Conclusion
- 12) Summary
- 14) Appendix

⊙ The title is NOT underlined or italicized .



⊙ **References of the introduction : Vancouver reference style :**

- References are listed in numerical order, and in the same order in which they are cited in text.
- The reference list appears at the end of the paper.
- Begin your reference list on a new page and title it 'References'.
- Use Arabic numerals (1, 2, 3, 4, 5, 6, 7, 8, 9).
- Either square [] or curved brackets () can be used.
- Reference numbers are generally placed outside or after full stops and commas.
- Be consistent with your referencing style across the document.



■ **Objectives :** Objectives of the survey must be **SMART**

■ **Content of objectives:** It must be **SMART**

- ⇒ **Client.**
- ⇒ **Methods**
- ⇒ **Activity.**
- ⇒ **Results.**
- ⇒ **Time linked.**

Section - 7

Vancouver reference style

■ Example:

1. Smith SD, Jones, AD. Organ donation. N Engl J Med. 2001;657:230-5.
2. Brown JG. Asphyxiation. Med J Aust. 2003; 432:120-4.

Journal

Format:

surname Initials, surname Initials. Title of article. Title of Journal. [abbreviated] year/dateYear Month date;Volume Number(Issue number);page numbers.

Example:

1. Pass RF, Zhang C, Evans A, Simpson T, Andrews W, Huang M, et al. Vaccine prevention of maternal cytomegalovirus infection. N Engl J Med 2009 Mar 19;360(12):1191-99.

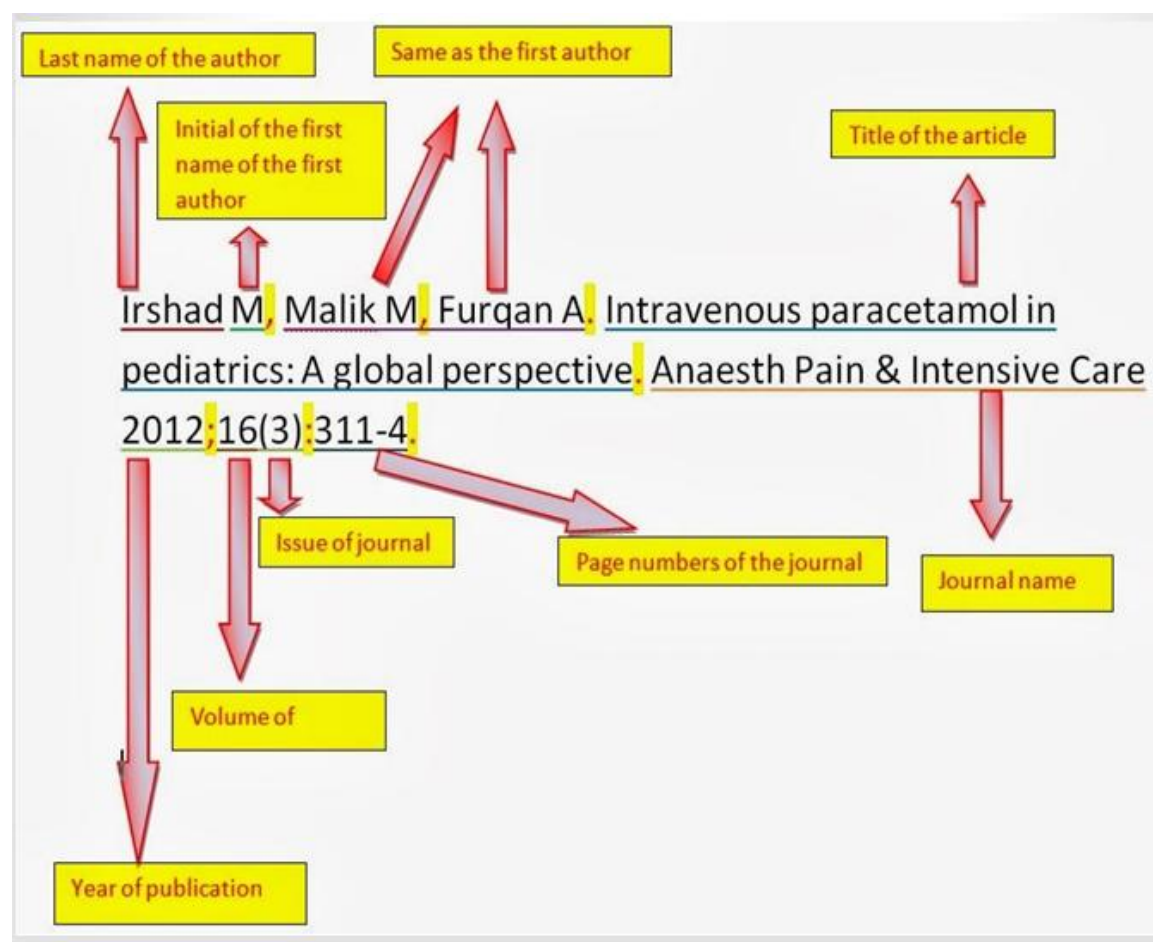
Li W, Huang B, Kang D, Erik De Clercq E, Daelemans D, Pannecouque C, et al. Design, synthesis, and biological evaluation of novel 5- Alkyl- 6- Adamantylmethylpyrimidin- 4(3H)- ones as HIV- 1 non-nucleoside reverse- transcriptase inhibitors. Chem Biol Drug Des [Internet]. 2016 [cited 8 September 2016];88(3):380-385. Available from: <http://onlinelibrary.wiley.com/doi/10.1111/cbdd.12765/epdf>

More than six authors, use et al. Article Title

Publication Year (cited date) Volume (Issue) Page Number

Capitalize initial letters of Journal Title:
Chemical biology & drug design

Available from: URL or Digital Object Identifier (DOI)



Section -2 (Methods of data collection)

Interview

⊙ Consider using an interview if:

- ① respondents have poor literacy.
- ② need to provide detailed data.
- ③ need to collect data faster.
- ④ want high response rate.
- ⑤ Some questions need to be clarified to respondents.

Closed ended Questions

- ① **Dichotomous** (two choices: Yes / No)
- ② **Multiple** (more than two choices)
- ③ **Likert scale** (the amount of agreement / disagreement)
- ④ **Numeric:** Q: How far (to the nearest kilometer) did you travel today to reach this supermarket? km
- ⑤ **Semantic differential**
- ⑥ **Rank order**

Questions order

- ⊙ It is generally best to keep all questions dealing with **demographic information (such as age)** **at the end of the questionnaire.**
- ⊙ **Avoid using words like "occasionally", "regularly** e.g. Q: how often they visit the cinema?

Sensitive questions

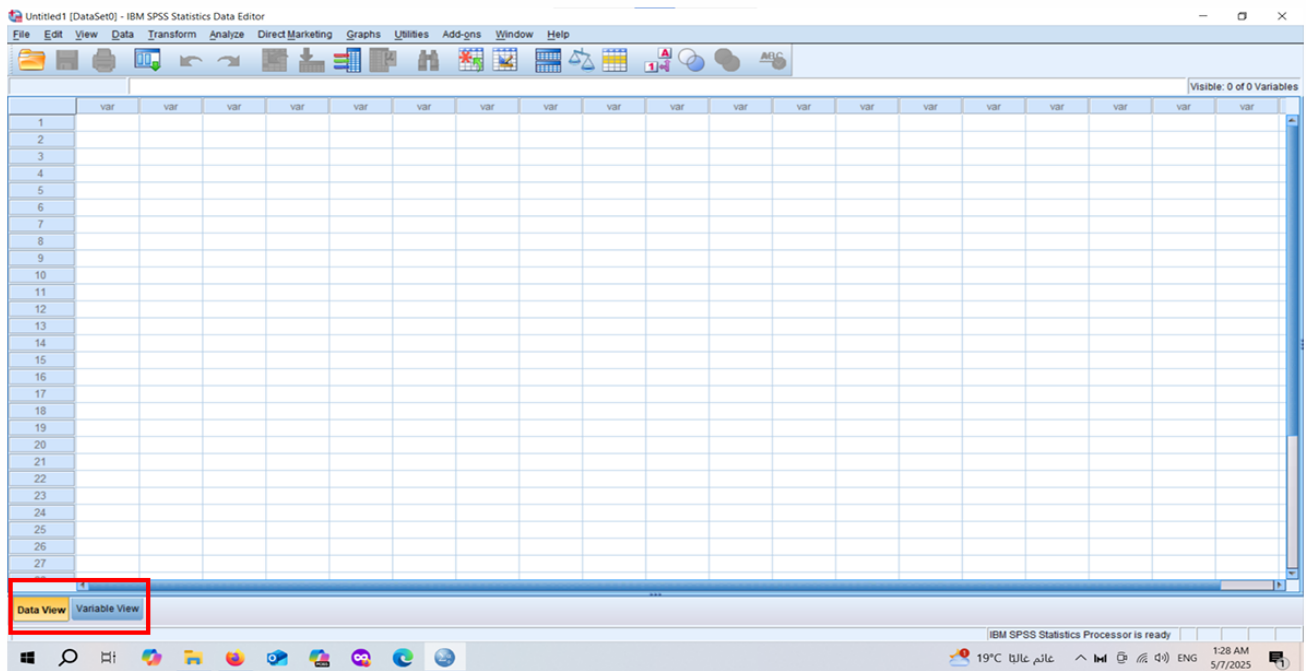
■ Should be prefaced by an interactive statement explaining the relevance of the question.

Piloting (Testing) a questionnaire

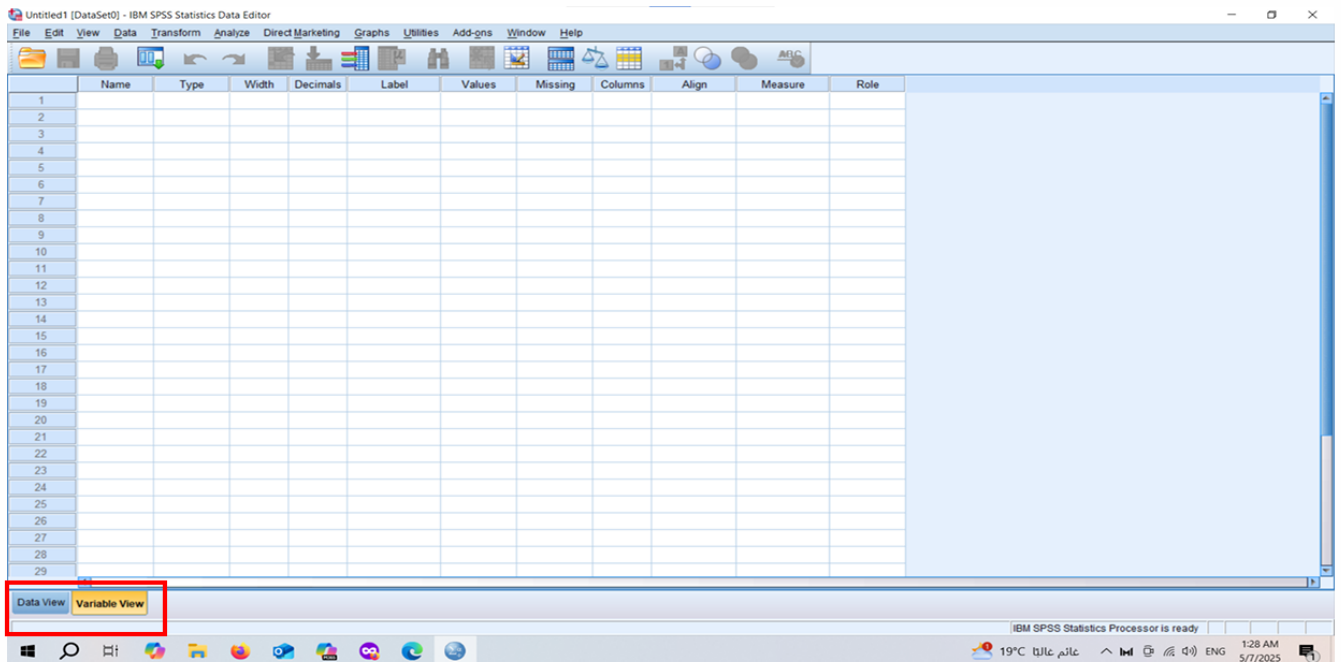
Section-4

SPSS

SPSS views.....Data view



SPSS views.....Variable view



Data view.....Rows

IBM SPSS Statistics Data Editor - Data View

Visible: 71 of 71 Variables

	اسم الطالب	Serial_number	Sheet_No	Age	Sex	Residence	Socioeconomic_status	Faculty	Grade	Last_GPA	Source_of_stress_None	Source_of_stress_Lack_of_time_management
1	حسن محمد عيسى	42110263.0000000	1.0	21.0	1.0	1.0	2.0	3.0	4.0	3.0	0.0	0.0
2	حسن محمد عيسى	42110263.0000000	2.0	20.0	1.0	2.0	2.0	1.0	3.0	2.0	0.0	0.0
3	حسن محمد عيسى	42110263.0000000	3.0	20.0	1.0	2.0	2.0	2.0	3.0	1.0	0.0	0.0
4	حسن محمد عيسى	42110263.0000000	4.0	20.0	1.0	1.0	3.0	2.0	3.0	2.0	0.0	0.0
5	حسن محمد عيسى	42110263.0000000	5.0	20.0	1.0	2.0	2.0	2.0	3.0	2.0	0.0	1.0
6	حسن محمد عيسى	42110263.0000000	6.0	20.0	1.0	2.0	2.0	3.0	3.0	1.0	0.0	1.0
7	حسن محمد عيسى	42110263.0000000	7.0	19.0	1.0	1.0	2.0	1.0	2.0	2.0	0.0	1.0
8	حسن محمد عيسى	42110263.0000000	8.0	20.0	2.0	1.0	2.0	1.0	3.0	1.0	0.0	0.0
9	حسن محمد عيسى	42110263.0000000	9.0	22.0	1.0	2.0	2.0	1.0	5.0	2.0	0.0	1.0
10	حسن محمد عيسى	42110263.0000000	10.0	23.0	1.0	1.0	2.0	1.0	5.0	2.0	0.0	1.0
11	حالا محمد عبد العزيز الداروي	42110264.0000000	1.0	23.0	2.0	2.0	2.0	1.0	4.0	1.0	0.0	1.0
12	حالا محمد عبد العزيز الداروي	42110264.0000000	2.0	19.0	2.0	1.0	2.0	1.0	1.0	1.0	0.0	1.0
13	حالا محمد عبد العزيز الداروي	42110264.0000000	3.0	20.0	2.0	2.0	2.0	1.0	2.0	3.0	0.0	1.0
14	حالا محمد عبد العزيز الداروي	42110264.0000000	4.0	20.0	2.0	2.0	2.0	1.0	2.0	2.0	0.0	0.0
15	حالا محمد عبد العزيز الداروي	42110264.0000000	5.0	20.0	2.0	2.0	2.0	1.0	2.0	1.0	0.0	0.0
16	حالا محمد عبد العزيز الداروي	42110264.0000000	6.0	19.0	2.0	2.0	2.0	2.0	1.0	2.0	0.0	1.0
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20	حالا محمد عبد العزيز الداروي	42110264.0000000	10.0	22.0	2.0	2.0	2.0	3.0	5.0	2.0	0.0	1.0
21	حمزة الشرف مرزوق محمد	42110266.0000000	1.0	21.0	1.0	1.0	2.0	1.0	2.0	2.0	0.0	0.0
22	حمزة الشرف مرزوق محمد	42110266.0000000	2.0	20.0	1.0	2.0	2.0	1.0	2.0	2.0	0.0	0.0
23	حمزة الشرف مرزوق محمد	42110266.0000000	3.0	21.0	1.0	1.0	2.0	1.0	3.0	2.0	0.0	1.0
24	حمزة الشرف مرزوق محمد	42110266.0000000	4.0	21.0	1.0	2.0	2.0	1.0	3.0	1.0	0.0	1.0
25	حمزة الشرف مرزوق محمد	42110266.0000000	5.0	20.0	1.0	1.0	3.0	1.0	2.0	2.0	0.0	1.0
26	حمزة الشرف مرزوق محمد	42110266.0000000	6.0	21.0	2.0	2.0	2.0	2.0	3.0	2.0	0.0	1.0

IBM SPSS Statistics Processor is ready

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Data view.....Columns

IBM SPSS Statistics Data Editor - Data View

Visible: 71 of 71 Variables

	اسم الطالب	Serial_number	Sheet_No	Age	Sex	Residence	Socioeconomic_status	Faculty	Grade	Last_GPA	Source_of_stress_None	Source_of_stress_Lack_of_time_management
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26	حمزة الشرف مرزوق محمد	42110266.0000000	6.0	21.0	2.0	2.0	2.0	2.0	3.0	2.0	0.0	1.0

IBM SPSS Statistics Processor is ready

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Variable view..... Type of variable

IBM SPSS Statistics Data Editor - Variable View

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1	اسم الطالب	String	119	0		None	None	13	Left	Measure	Input
2	Serial_number	Numeric	12	10		None	None	12	Right	Scale	Input
3	Sheet_No	Numeric	12	1		None	None	12	Right	Nominal	Input
4	Age	Numeric	12	1		None	None	12	Right	Scale	Input
5	Sex	Numeric	12	1		None	None	12	Right	Nominal	Input
6	Residence	Numeric	12	1		None	None	12	Right	Nominal	Input
7	Socioeconomic_status	Numeric	12	1		None	None	12	Right	Nominal	Input
8	Faculty	Numeric	12	1		None	None	12	Right	Nominal	Input
9	Grade	Numeric	12	1		None	None	12	Right	Nominal	Input
10	Last_GPA	Numeric	12	1		None	None	12	Right	Nominal	Input
11	Source_of_stress_None	Numeric	12	1		None	None	12	Right	Nominal	Input
12	Source_of_stress_Lack_of_time_management	Numeric	12	1		None	None	12	Right	Nominal	Input
13	Source_of_stress_Lack_of_time_management	Numeric	12	1		None	None	12	Right	Nominal	Input
14	Source_of_stress_Lack_of_time_management	Numeric	12	1		None	None	12	Right	Nominal	Input
15	Source_of_stress_Lack_of_time_management	Numeric	12	1		None	None	12	Right	Nominal	Input
16	Source_of_stress_Lack_of_time_management	Numeric	12	1		None	None	12	Right	Nominal	Input
17	Source_of_stress_Lack_of_time_management	Numeric	12	1		None	None	12	Right	Nominal	Input
18	Source_of_stress_Lack_of_time_management	Numeric	12	1		None	None	12	Right	Nominal	Input
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21	I_tended_to...	Numeric	12	1		None	None	12	Right	Nominal	Input
22	I_felt_that_I...	Numeric	12	1		None	None	12	Right	Nominal	Input
23	I_found_my...	Numeric	12	1		None	None	12	Right	Nominal	Input
24	I_found_it_d...	Numeric	12	1		None	None	12	Right	Nominal	Input
25	Intolerant_o...	Numeric	12	1		None	None	12	Right	Nominal	Input
26	I_felt_that_I...	Numeric	12	1		None	None	12	Right	Nominal	Input
27	Stress_score	Numeric	12	1		None	None	12	Right	Nominal	Input
28	@1_Turning...	Numeric	12	1		None	None	12	Right	Nominal	Input
29	@2_Concen...	Numeric	12	1		None	None	12	Right	Nominal	Input

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Section-3

Data Processing

A) Editing

- ⊙ It is the 1st step in processing data.
- ⊙ Editing(cleaning): is to make sure data is clean free from inconsistencies and incompleteness.

B) Coding

- ⊙ First ,identify whether a set of data is **qualitative or quantitative** in nature.
- ⊙ If data is **qualitative** you should differentiate between
 - ① **Descriptive qualitative data** : recorded in narrative form often as text e.g case history of a patient \ description of a service to a Community.
 - ② **Qualitative Data in Discrete Categories**: data that is grouped into distinct, separate categories without numerical measurement. For example:
 - ☑ Income : above average, average, below average.
 - ☑ Gender : male, female.
 - ☑ Religion : Christian, Hindu, Muslim, etc
 - ☑ Attitude towards an issue : strongly favorable, favorable, uncertain, unfavorable, strongly unfavorable.

2. **Residence:** ☐ Rural (1) ☐ Urban (2)

3. **Gender:** ☐ Male (1) ☐ Female (2)

4. **Academic year:**

☐ First Year (1)

☐ Second Year (2)

☐ Third Year (3)

☐ Fourth Year (4)

☐ Fifth Year (5)

Section-5

Organization and presentation of data

■ Methods of communicating and displaying analyzed data:

- ① Text.
- ② Tables.
- ③ Graphs.
- ④ Numerical methods (statistical measures).

① Text

- ⊙ By far, is the most common method of communication in both quantitative and qualitative research studies and, perhaps, the only method in the latter.

② Tables

- ⊙ Other than text, tables are the most common method of presenting analyzed data .

Structure :

The diagram illustrates the structure of a table with the following components labeled:

- Title:** Points to the caption "Table 16.1 : Attitude towards uranium mining by age".
- Column heading:** Points to the header row "Age of respondent".
- Body:** Points to the main data area of the table.
- Stub:** Points to the first column "Attitude towards uranium mining".
- Supplementary notes OR Footnotes:** Points to the "Notes : Source :" section at the bottom.

Attitude towards uranium mining	Age of respondent					Total
	<25	25 - 34	35 - 44	45 - 54	55 +	
Strongly favorable						
Favorable						
Uncertain						
Unfavorable						
Strongly unfavorable						
Total						

Notes : Source :

(1-Title) Table x: attitudes of respondents

(2-Stub)	Attitudes toward healthy	Age of the respondents (3 -Column heading)				Total	
	diet	<20	20-	30-	≥40		
	Agree						
	Neutral		(4 -Body)				
	Disagree						
(5 -supplementary notes) source: XY Journal							

Criteria of smart table			
Table (n) "Title".....			
Heading of row (Sex)	Heading of columns (Marital status)		Total
	Subheading	Subheading	
subheading			Row total
Subheading			Row total
Total	Column total	Column total	Grand total
Notes			

The main characteristics of tables include:

- 1- Title: short, comprehensive, no abbreviations.
- 2- Number: enumerated
- 3- Suitable number of rows & columns
- 4- Title for each column or row
- 5- Should include the statistical analysis of its contents.
- 6- Easy to interpret (self explanatory)

(Stub))	Attitude s toward healthy diet	Age of the respondents (Column heading)				Total
		<20	20-	30-	≥40	
	Agree					
	Neutral	(Body)				
	Disagree					
(supplementary notes) source: XY Journal						

 **There are four types of footnotes :**

- a) Source notes.
- b) Other general notes.
- c) Notes on specific parts of the table.
- d) Notes on the level of probability.

👉 Source should be identified at the bottom of table, and labeled by the word "Source"

Types of tables :

Depending on the number of variables about which information is displayed :

- 1 **Univariate (frequency tables)** containing information about **one variable**.
- 2 **Bivariate (cross-tabulations)** containing information about **two variables**.
- 3 **Polyvariate or multivariate** containing information about **more than two variables**.

Examples

Collected data for 200 person regarding sex & marital status:

Sex[illegible]

Marital status

Marital status

Sex	Frequency
Male	60
Female	140
Total	200

Marital status	Frequency
Single	50
Married	150
Total	200

Frequency distribution tables

Suppose systolic blood pressures of 25 males were measured as follows:

110 112 113 112 110 113 115 110 112 115 112 112 113 112 115 115 112 110
113 110 112 110 112 110 112

Systolic blood pressure	Frequency (N0)
110	7
112	10
113	4
115	4

Another variable has been added, i.e. age

Title: Distribution of cases according to their systolic BP and age groups.

Systolic BP	Age groups			
	24-	25-	26-	27+
110	7	-	-	-
112	-	10	-	-
113	-	-	4	-
115	-	-	-	4

Weight	Number of children
100-	10
110-	15
120-	25
130-	10

③ Graphs

Qualitative	Quantitative
Pie chart - Columns & bars -	Histogram - Frequency polygon - Line graph -

Different types of graphical presentation

1 Pie chart

- ⊙ The pie chart is a circle.
- ⊙ There are 360 degrees in a circle, and so the full circle can be used to represent 100 %, or the total population.
- ⊙ The circle or pie is **divided into sections** in proportion to the size of each subcategory of a frequency distribution.
- ⊙ The proportions may be shown either as **absolute numbers or as percentages**.

➤ Percentage not frequency

➤ Single variable

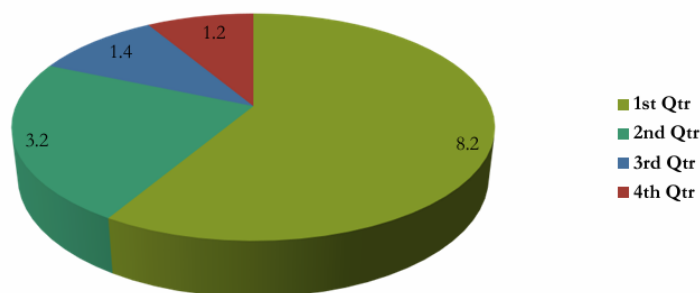
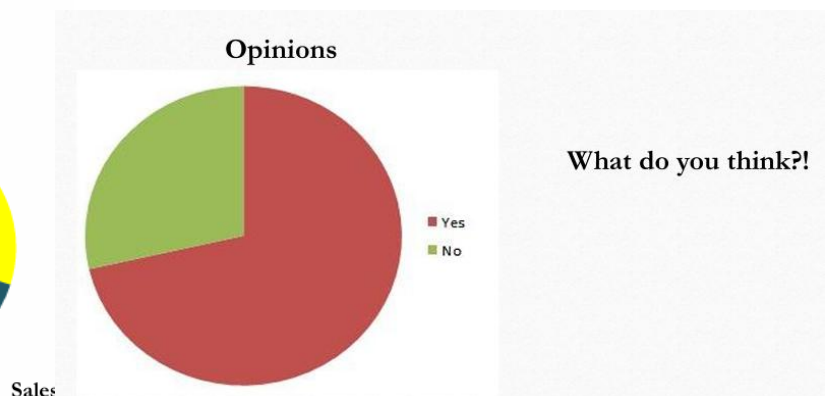
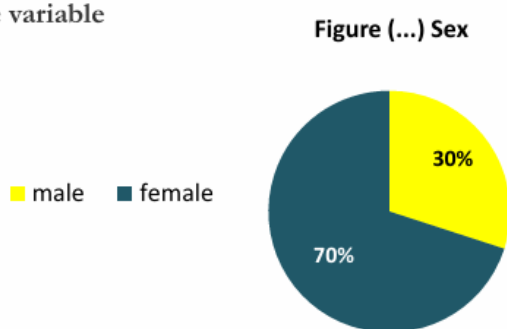
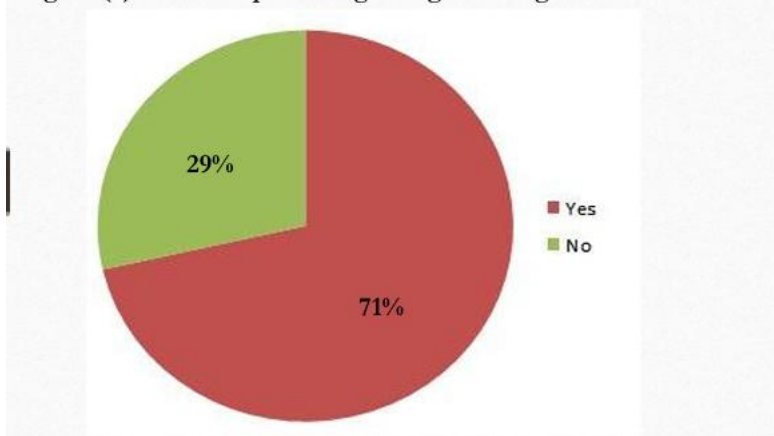


Figure (7) Workers opinion regarding reducing the shifts' hours



② Bar chart

- ⊙ Bar chart is used for displaying **qualitative (categorical) variables**.
- ⊙ Bar chart is used for variables **measured on nominal or ordinal scales**.
- ⊙ **The discrete categories are usually displayed along the x-axis** & the number or percentage of respondents on the y-axis. However, it is possible to display the discrete categories along the y-axis (**horizontal bar chart**).
- ⊙ A bar chart is identical to a histogram, except that in a bar chart the **columns are spaced**, thus indicating that the data is categorical.

⊙ Types of bar chart :

① Simple bar chart.

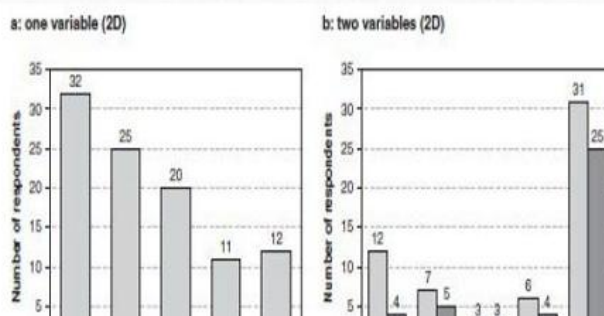
② Horizontal bar chart.

③ Clustered bar chart.

④ Stacked bar chart

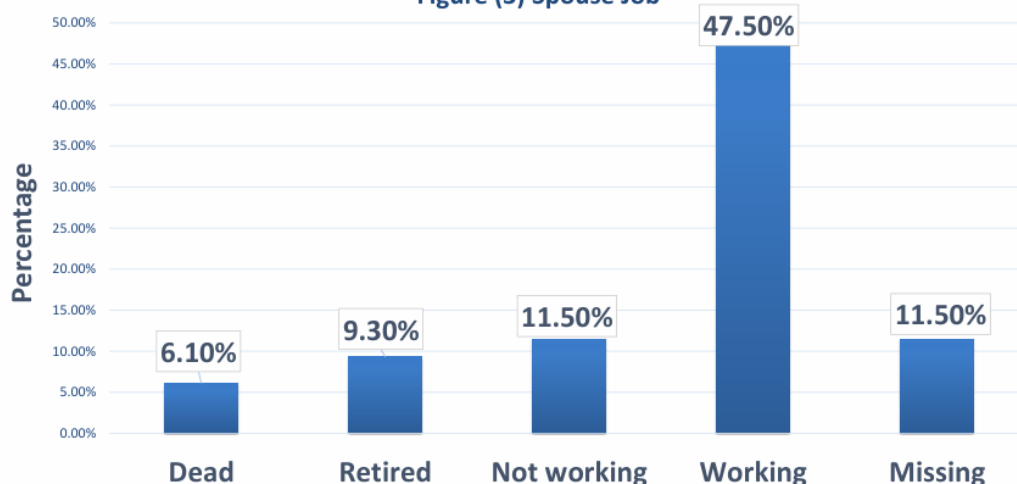
Stacked bar chart :

A stacked bar chart is similar to a bar chart except that in the former each bar shows information about two or more variables stacked onto each other vertically.

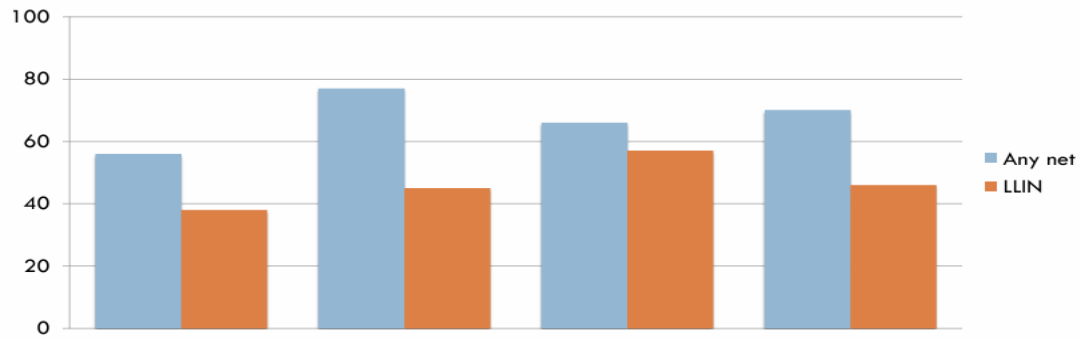


Univariate bar chart

Figure (3) Spouse Job



Bivariate Bar chart



stacked bar charts

Malignancies in relation to gender

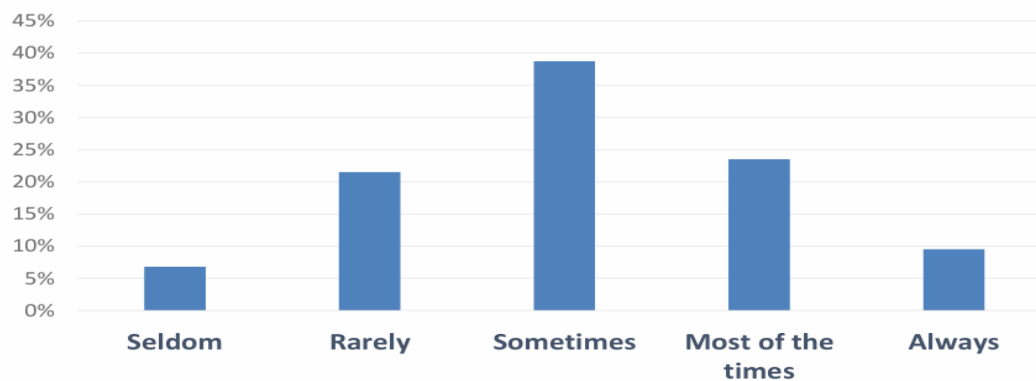
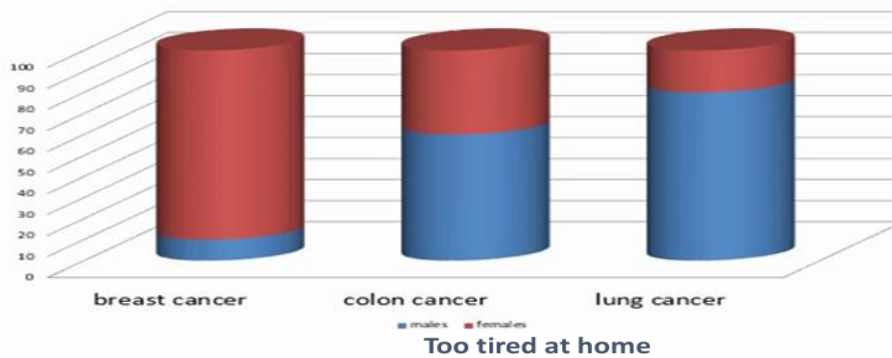
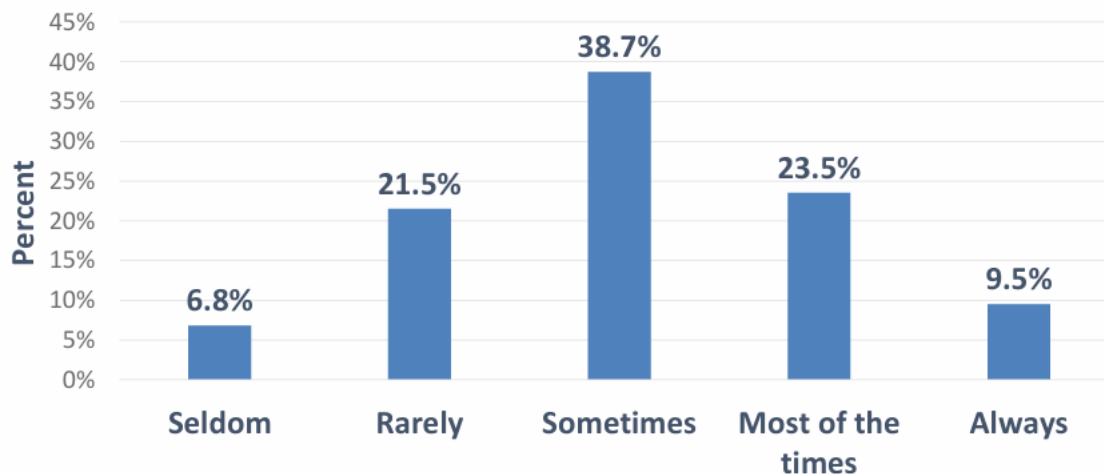


Figure (20) Your job makes you feel too tired to do the things that need attention at home?



Sample of horizontal bar chart

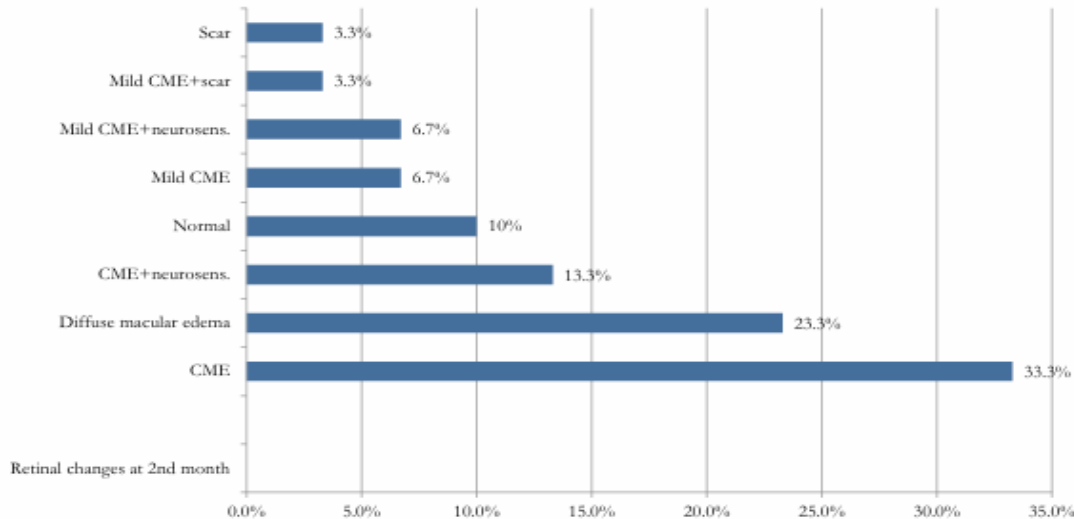


Table (6) Results of positive corneal cultures among the studied groups

Results of cultures	Group A N=20		Group B N=20		Test-of significance	P value
	No	%	No	%		
Yeast	11	55.0	13	65.0	$X^2=0.417$	0.519
Filamentous Fungi	9	45.0	7	35.0		

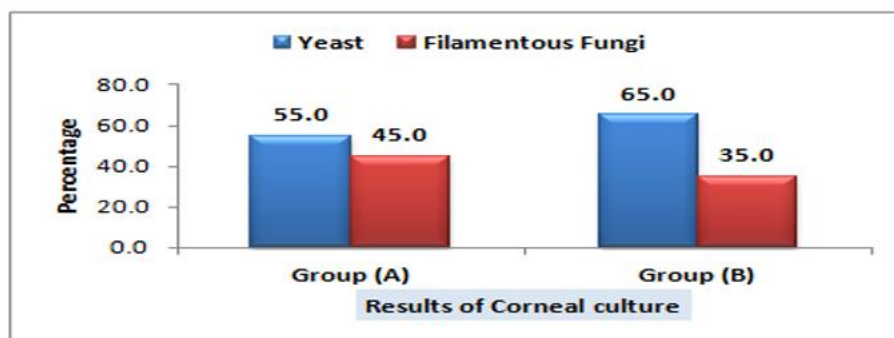


Table for the relationships between data

Fig (8) Results of corneal culture among the studied groups

③ Histogram

- A histogram consists of a series of **rectangles drawn next to each other without any space** between them, each representing the frequency of a category or subcategory.
- Height of rectangles is in proportion to the frequency they represent.
- The height of the rectangles may represent the **absolute or frequency or the percentage** of the total.

- As mentioned, a histogram can be **drawn for both categorical & continuous variables.**
- When interpreting a histogram you need to take into account whether it is representing categorical or continuous variables.

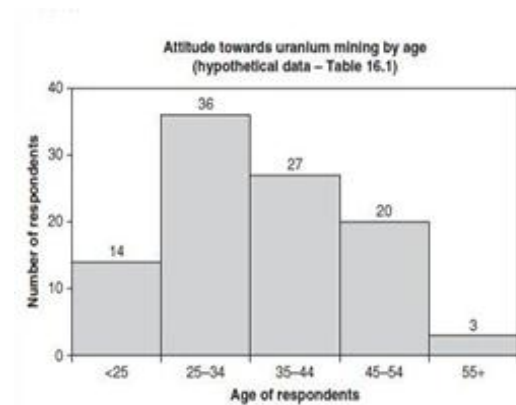
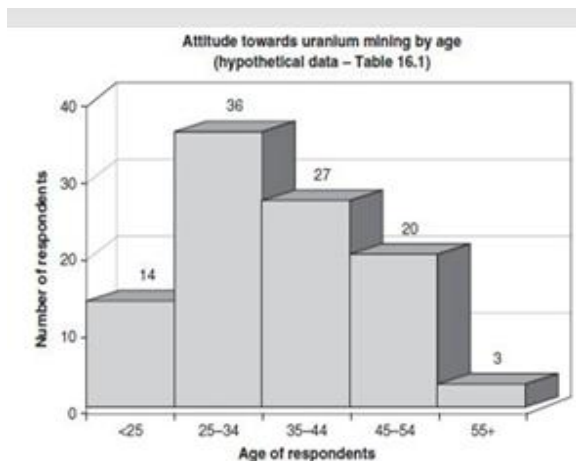
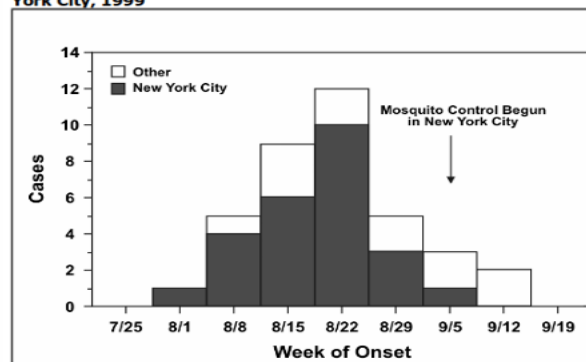
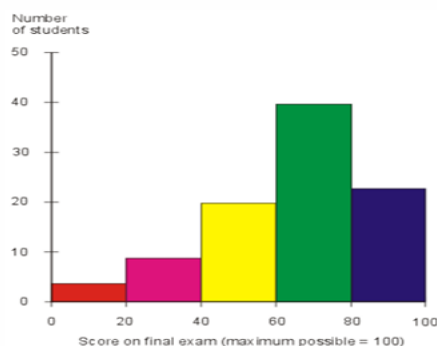
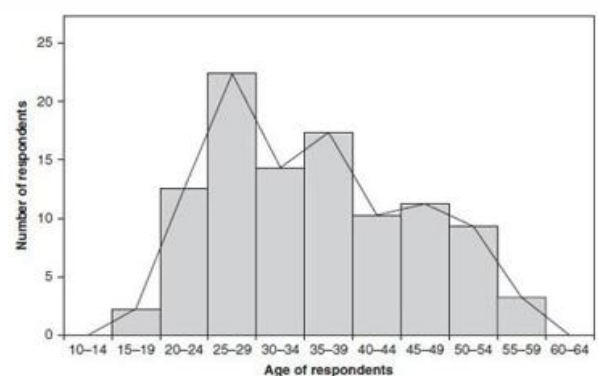
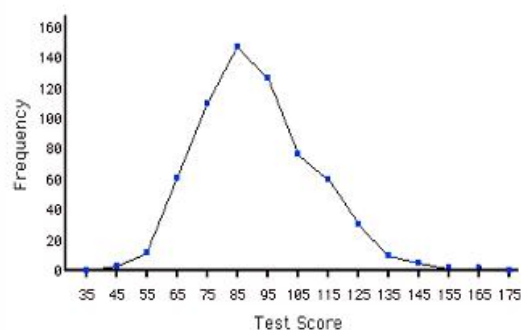


Figure 1.26 Number of Reported Cases of West Nile Encephalitis in York City, 1999



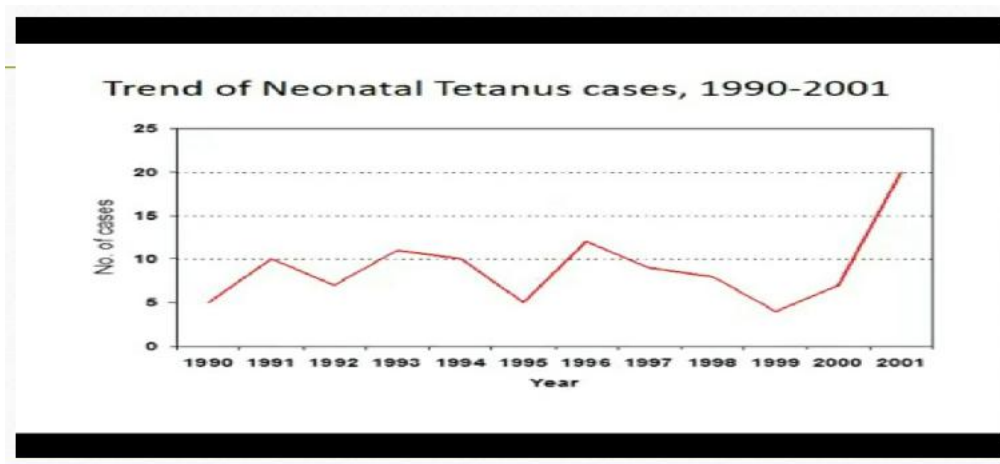
④ Frequency polygon

- ⊙ The frequency polygon is **very similar to a histogram.**
- ⊙ It is **drawn by joining the midpoint of each rectangle at a height** commensurate with the frequency of that interval.
- ⊙ It is constructed by marking a point at the midpoint of the class interval. These points are connected to with straight lines



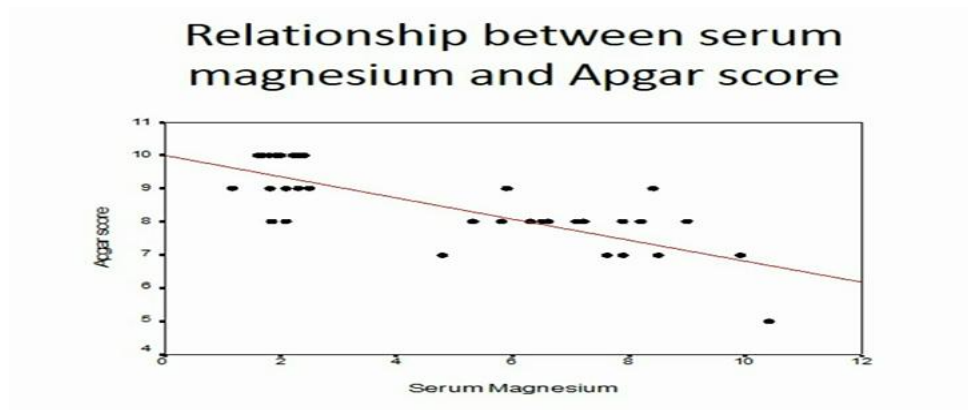
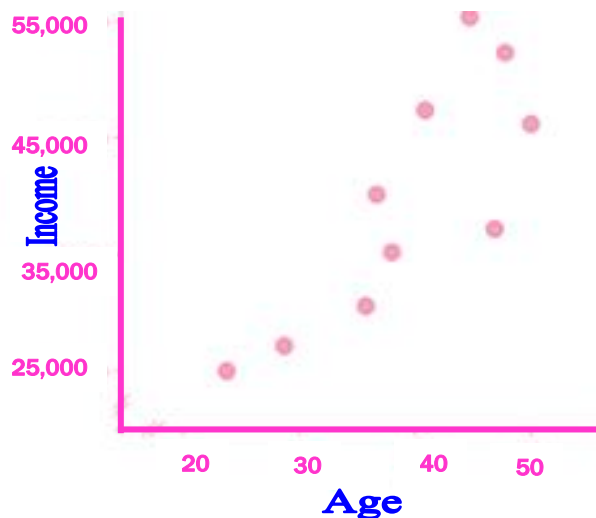
5 Line graph

It is suited for displaying amount of change in **a continuous variable over time on the horizontal axis**



- When you want to show **how one variable changes in relation to a change in the other variable**, a scattergram is extremely effective.
- For a scattergram, **both the variables must be measured either on interval or ratio scales** and the **data on both the variables needs to be available in absolute values for each observation**.
- You cannot develop a scattergram for categorical variables.
- **Data for both variables is taken in pairs** & displayed as dots in relation to their values on both axes.

Respondents	Income	Age
A	25,500	24
B	46,000	50
C	30,500	36
D	55,000	45
E	27,000	29
F	35,000	38
G	40,000	37
H	52,000	48
I	47,000	41
J	38,000	47



7 Stem-and-leaf display

- It is an **effective, quick & simple** way of displaying **a frequency distribution**.
- The stem-and-leaf diagram for a frequency distribution **running into two digits**.
- **It is plotted by displaying digits 0 to 9 on the left of the y-axis**, representing the tens of a frequency. **The figures representing the units of a frequency (i.e. the right-hand figure of a two-digit frequency) are displayed on the right of the y-axis.**
- Note that the stem-and-leaf display **does not use grouped data but absolute frequencies**.
- **If the display is rotated 90 degrees in an anti-clockwise direction, it effectively becomes a histogram.**

Stem and leaf diagrams

The scores of a class test are given below.
Draw an ordered stem and leaf diagram

17 23 46 31 17 19 26 31 42 5
21 32 36 37 37 38 41 40 19 12
7 48 29 39 42 38 41 32 36 35

```

0 | 5 7
1 | 2 7 7 9 9
2 | 1 3 6 9
3 | 1 1 2 2 5 6 6 7 7 8 8 9
4 | 0 1 1 2 2 6 8
  
```

```

      5 7
    1 2 7 7 9 9
    1 3 6 9
    1 1 2 2 5 6 6 7 7 8 8 9
    4 0 1 1 2 2 6 8
  
```

1	89
2	0001112222223344555556667777788899
3	0011122233333344555566677777889
4	1122233333444555566779
5	000113355667

Section 6

How to comment on tables and graphs

- ⊙ First write this table or graph shows.....
- ⊙ Then try to comment on the most important thing in your table or graph (for example: the highest or lowest percent or the item related to your topic)

Table (2): Prevalence of overweight and obesity among the studied group (n=500)

Weight grades	No.	Percent
Overweight	114	22.8%
Male	47	9.4%
Female	67	13.4%
Obese	59	11.8%
Male	33	6.6%
Female	26	5.2%

- ⊙ Table (2) shows prevalence of overweight and obesity of the studied group with (22.8%) of the participants were overweight. Percent of overweighted males and females from the total participants was (9.4% and 13.4%) respectively. Prevalence of obesity among studied group was (11.8%) with percent of obese males and females from the total participants was (6.6% and 5.2%) respectively.

Table (2): Distribution of the special habits among the studied patients in the burn unit of Tanta University Hospital

Special habits	Number (n=83)	Percentage %
Smoking	26	31.3
Alcohol	1	1.2
Drug abuse	7	8.4

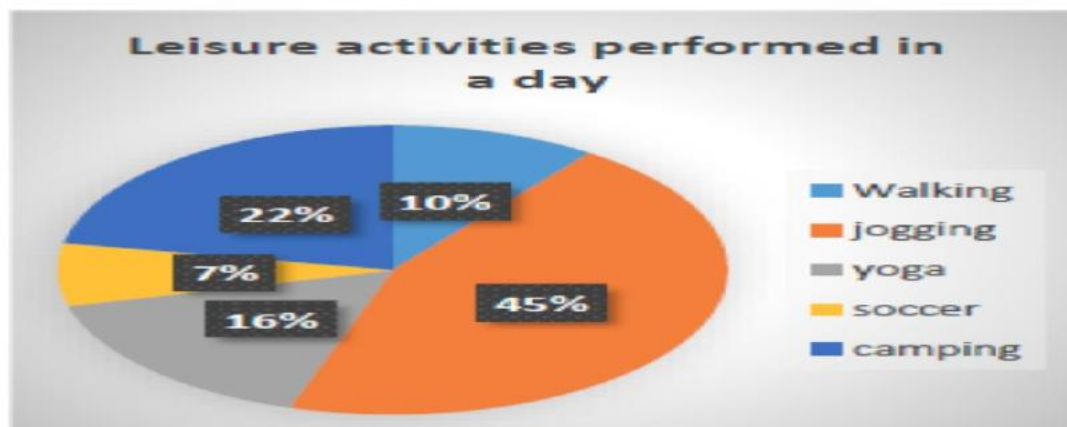
Table (2) shows that about third of the studied patients (31.3%) were smokers and 8.4% of them were drug abusers.

Table (3): Distribution of the studied patients in the burn unit of Tanta University Hospital according to present medical history

Medical history	Number (n=83)	Percentage %
History of chronic diseases:	24	28.9
DM	15	18.1
Other chronic diseases	9	10.8
Recent surgical intervention	4	4.8
Current presence of septic focus	19	22.9

Table (3) shows the medical history of the studied patients where 28.9% of them had chronic diseases like DM (18.1%) and 10.8% of them had other chronic diseases as hypertension, chronic liver disease and bronchial asthma. However, 4.8% of them only had a history of recent surgical intervention. Less than forth of them (22.9%) had a current septic focus as dental caries, boils, carbuncles, tonsillitis and vaginal infection.

A) Pie charts



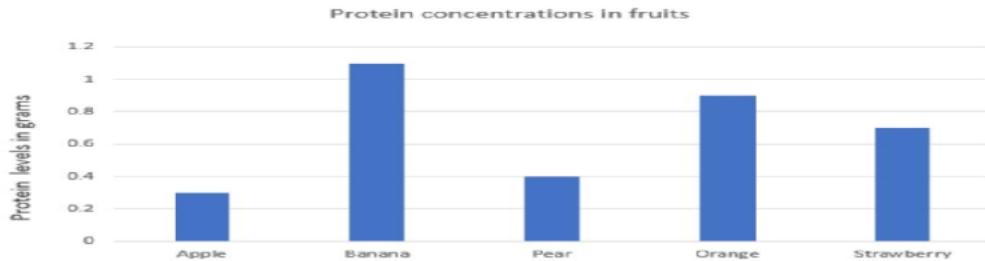
Approach for writing alt text:

Here, we are describing a pie chart of the leisure activities performed in a day.

⦿ Comment:

- ☑ This pie chart represents leisure activities performed on a day with the highest percent (45%) to jogging and lowest percent (7%) to soccer

B) Bar graphs



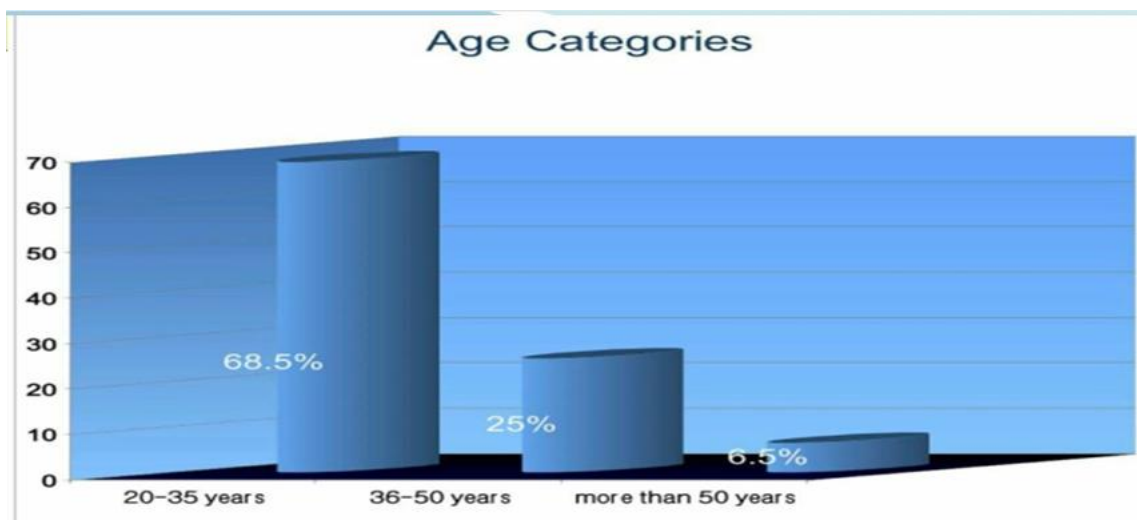
A data generated by calculating the protein concentrations in fruits. The protein concentration in apple is 0.3 grams, banana has 1.1 grams, pear has 0.4 grams, orange has 0.9 grams, and strawberry has 0.7 grams.

Approach for writing alt text:

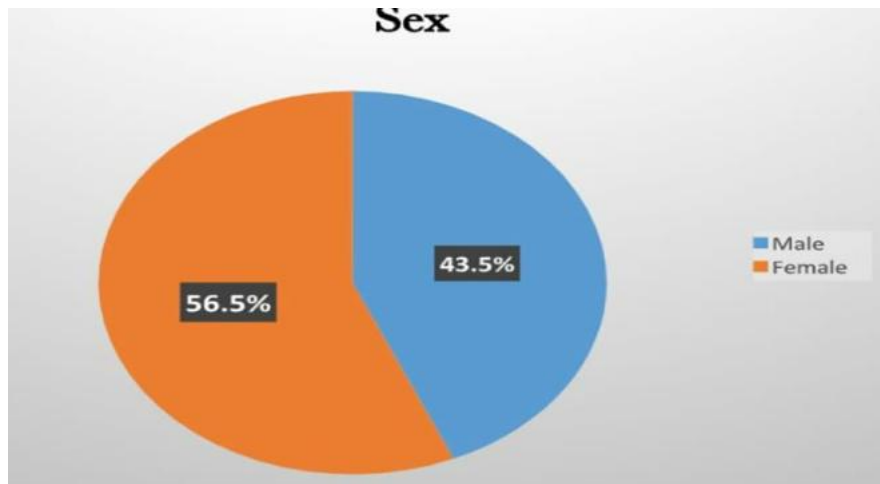
Here, we are describing a bar graph of the protein concentration in each fruit.

⦿ Comment:

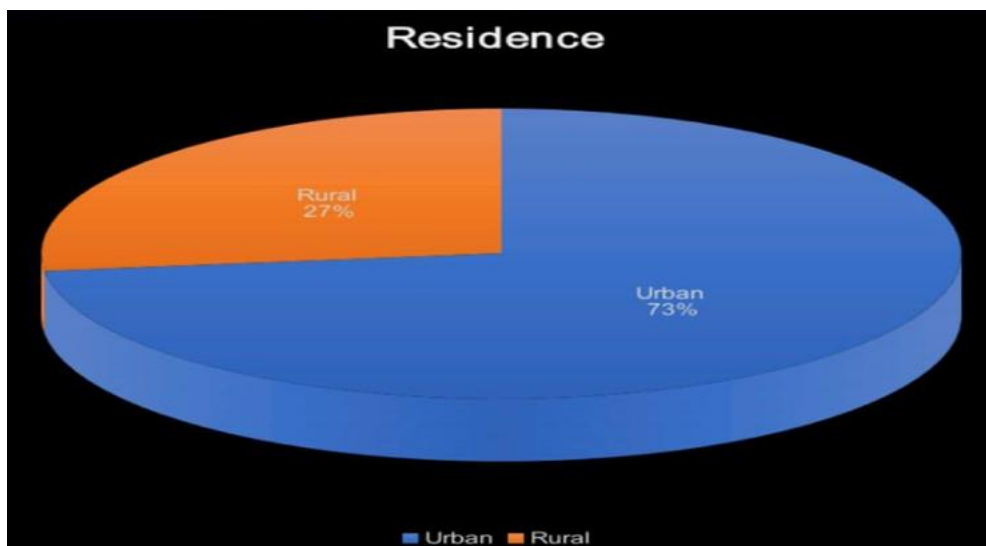
- ☑ This bar chart represents protein concentration in fruits with the highest amount (1.1 gram) in banana and only (0.3 gram) in apples



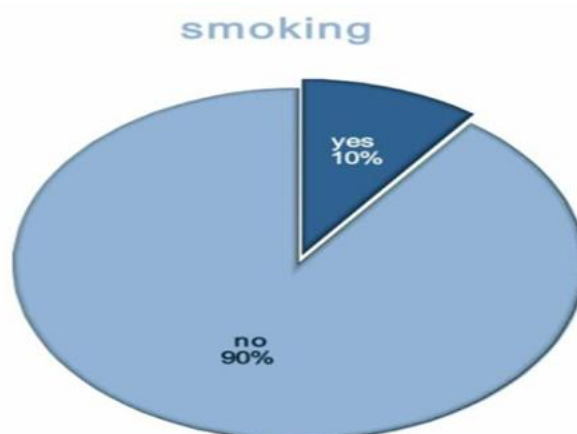
Nearly two third of participants were 20-35 years old



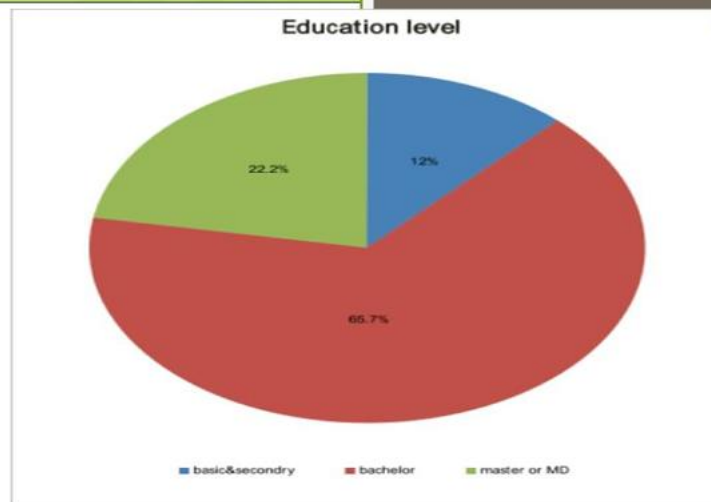
More than half (56.5%) of the participants were females



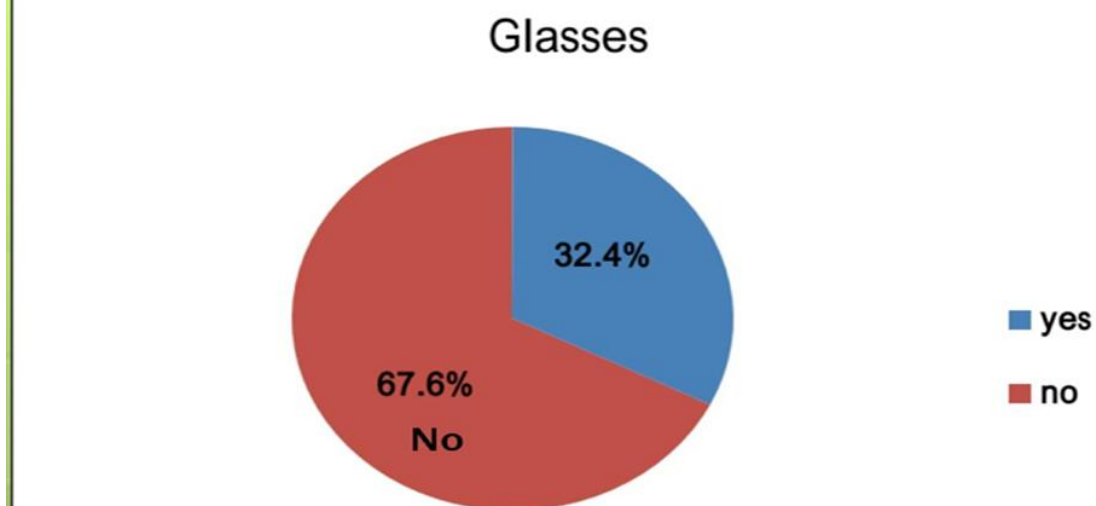
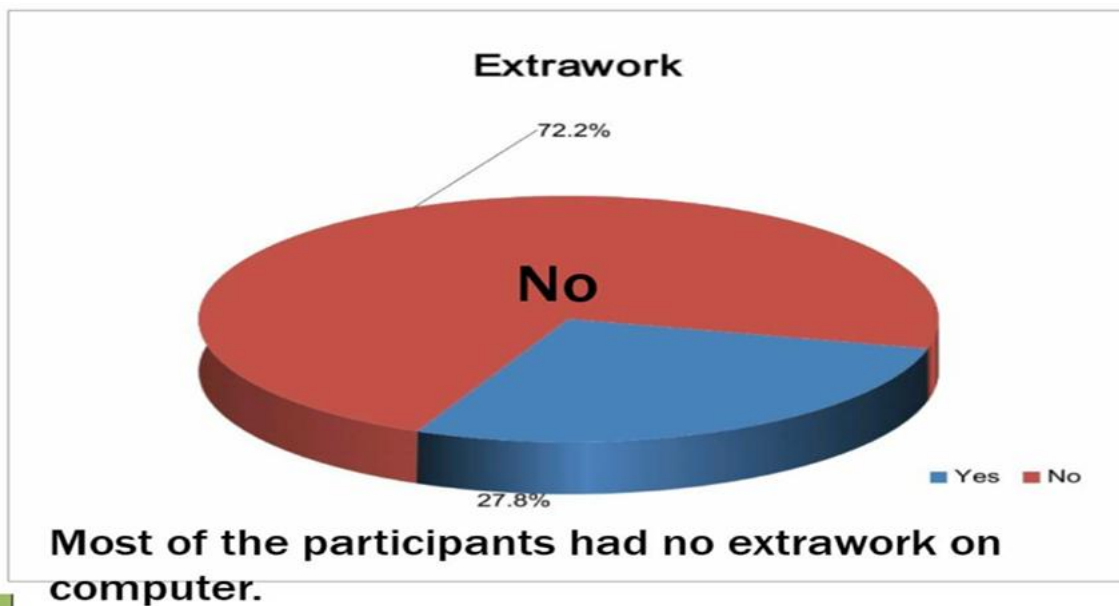
Nearly three quarter of the participants (73%) were from urban areas



Most of the participants were non smokers.

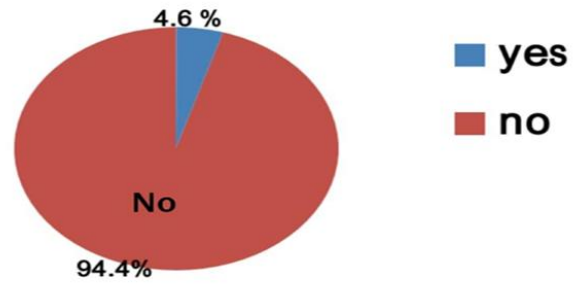


Nearly 2/3 of the participants had Bachelor degree.



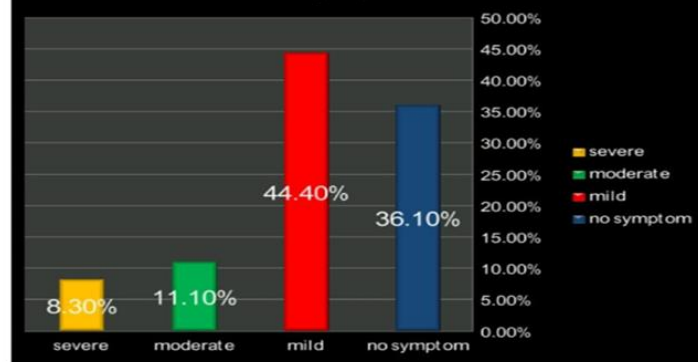
Nearly two third (67.6%) of participants don't wear glasses

Contact Lens



Most of the participants didn't wear contact lens.

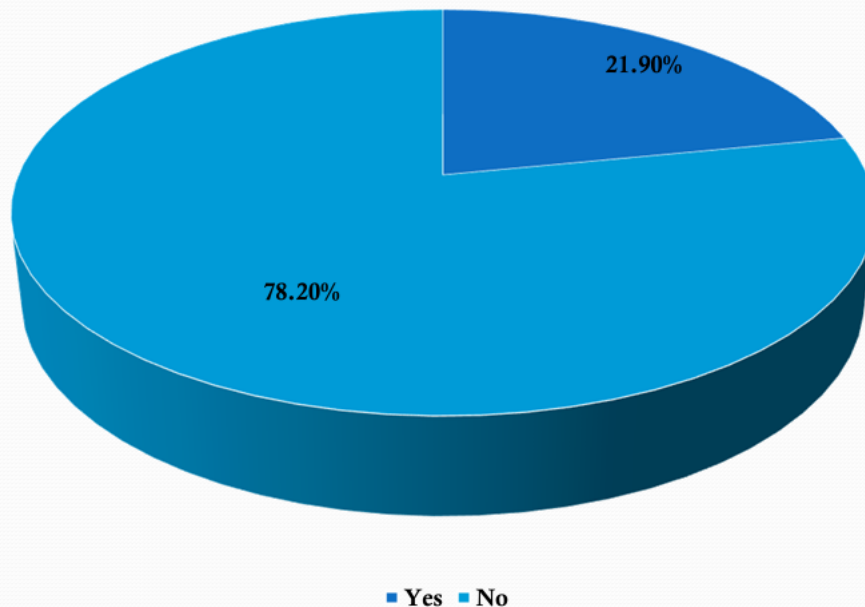
eye pain

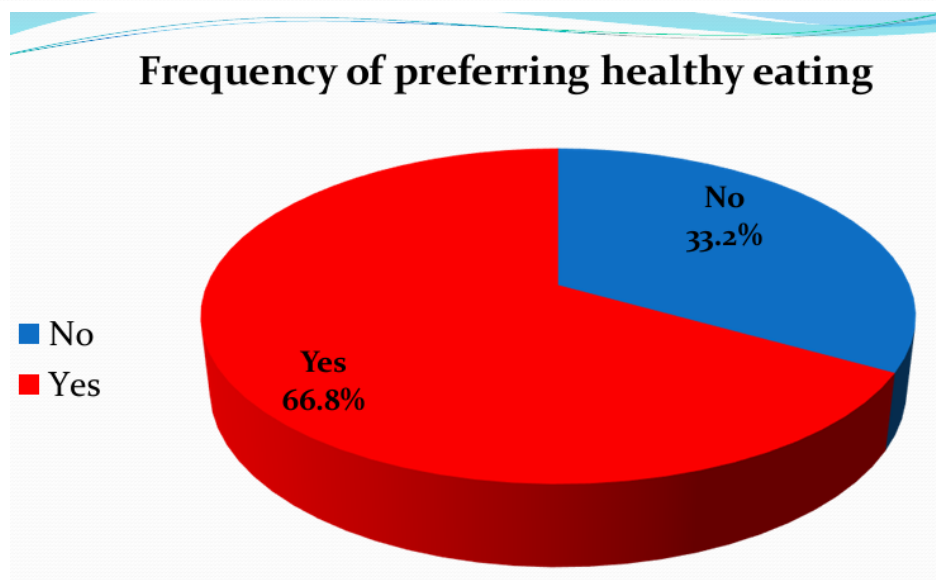
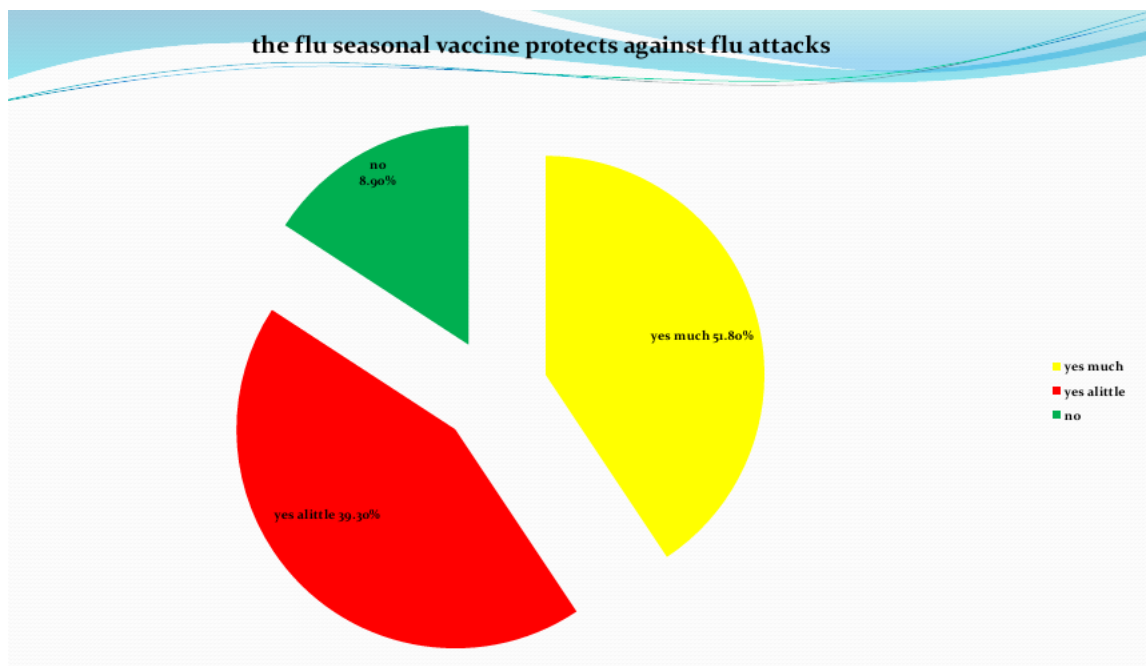
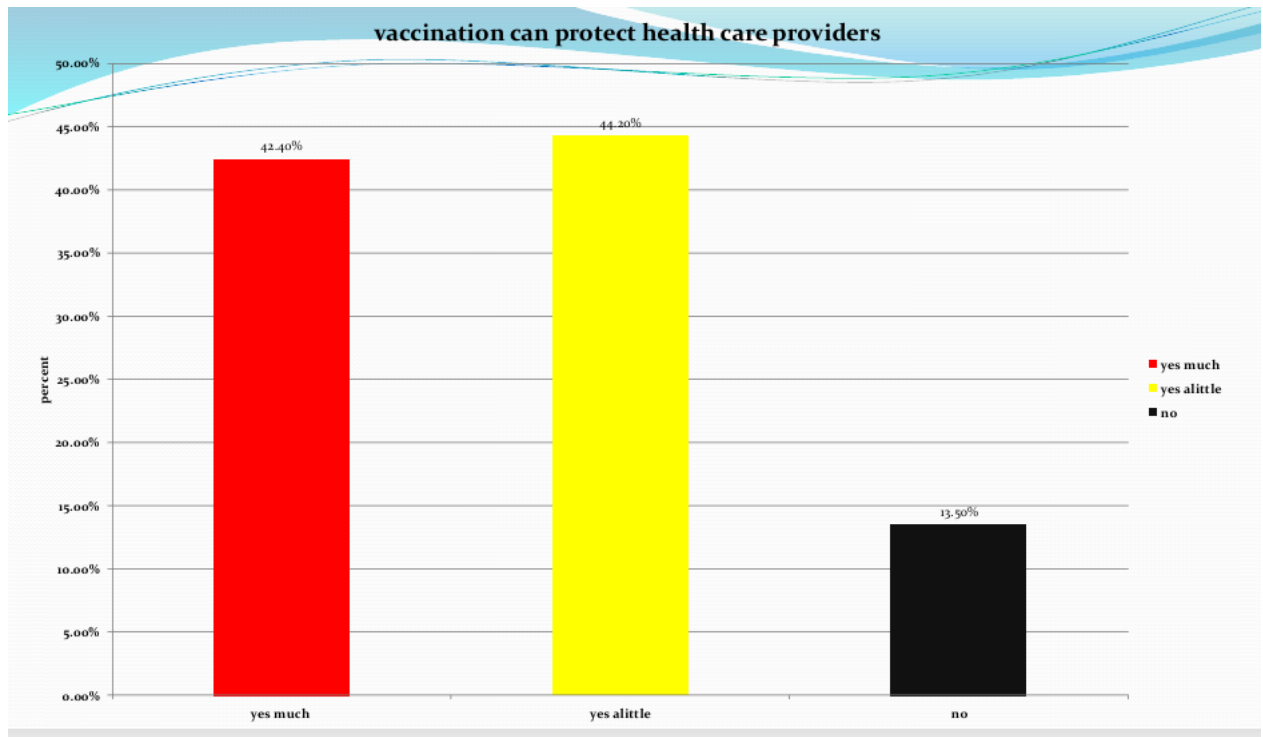


About 20% of the participants had moderate to severe degree of eye pain.

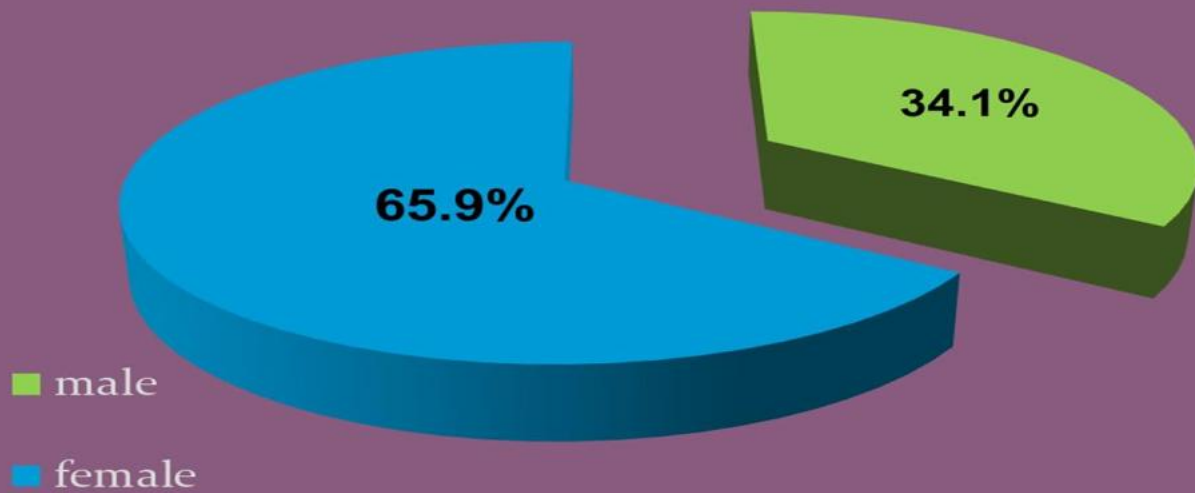
Try to comment

Are you vaccinated this year





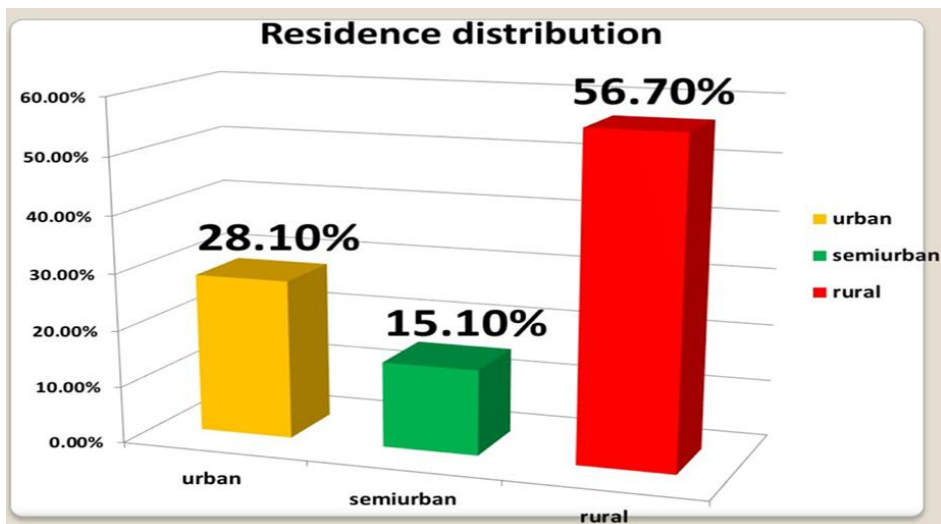
Gender distribution among the studied participants



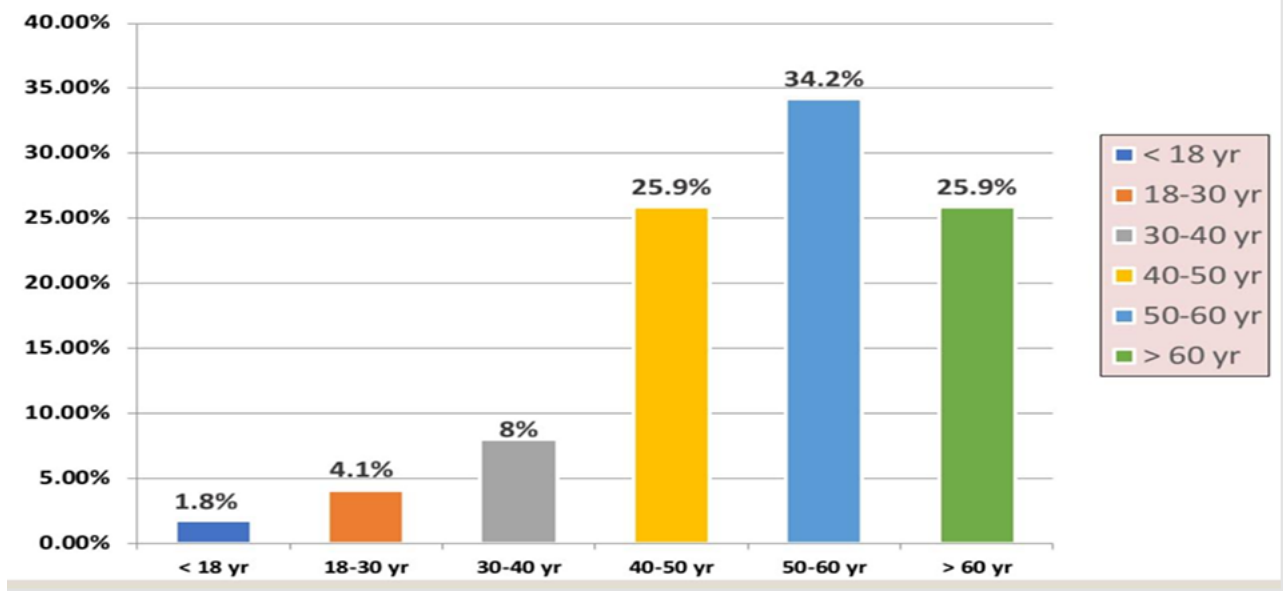
Marital Status



Residence distribution



Age categories distribution



How to write conclusion?

- ⊙ It can be written as a paragraph or in not more than 4-5 points.
- ⊙ Comment on the most important results that answer the study question.
- ⊙ Don't use percent.
- ⊙ Don't comment on sociodemographic data unless related to the research problem

Conclusion

⊙ Influenza vaccination coverage among medical students is dismally low in Egypt poor knowledge of vaccine availability and misperceptions about vaccine effectiveness, fear of adverse effects and obliviousness to being-at-risk being important barriers. Multifaceted, adaptable measures need to be invoked urgently to increase the coverage

How to write recommendations?

- ⊙ Based on your results what you recommend at your level.
- ⊙ For example from the study titled Overweight problem among early adolescents in preparatory schools in Tanta city
- ⊙ Encourage healthy eating among adolescents and health education campaigns for mothers about the importance of healthy eating for their children.
- ⊙ Encourage adolescents to drink milk, eat breakfast, fresh vegetables and fruits daily and to limit eating of fast foods and sugar sweetened beverages

Recommendations

- ⊙ On the basis of the study results, the following recommendations are suggested: Dissemination of information about the vaccine benefits, safety and efficacy among medical students.
- ⊙ Effective announcement about flu campaigns and motivation of the medical students and faculties to receive the vaccine.
- ⊙ Enforcement of policy and legislation to mandate the flu vaccine for health-care workers and students

Section 1 and 2 EBM: Developing an effective search strategy

Examples of PCIO question

⊙ A 45 year old male with alcohol issues presents after his third relapse following GP counselling on a monthly basis. He has heard about cognitive and behavioural therapy and asks you whether this is a treatment option that decreases the likelihood of relapse.

⊙ How can this clinical problem be translated into a searchable format?

⊙ PICO

- ☒ Patient: 45 yr old Male Alcoholic
- ☒ Intervention: Cognitive Behaviour Therapy
- ☒ Comparison: Counselling
- ☒ Outcome: Abstinence

⊙ A 30-year-old female presents with recurrent urinary tract infection for past 8 months; these episodes have been treated with several courses of antibiotics but keep recurring. She asks if recurrences can be prevented with prophylactic antibiotics

- ☒ P = Female patient with recurrent UTI
- ☒ I = prophylactic AB
- ☒ C = No intervention
- ☒ O = No recurrence

⊙ 25-year-old female has been recently diagnosed with classical Hodgkin's lymphoma (nodular sclerosing subtype). Staging reveals that she is a stage IIA with a 4.5 cm nodal mass in her neck and mediastinal nodes that necessitate chemotherapy. Her hematologist recommends combined modality therapy (chemotherapy/radiation therapy). The patient has done some reading about therapy and is worried about the long-term effects of radiation especially the risk of breast cancer.

- ☑ P = A 25-year-old female with stage IIA nodular sclerosing Hodgkin's lymphoma
- ☑ I= combined chemotherapy/radiation
- ☑ C = chemotherapy
- ☑ O = risk of breast cancer

⊙ Jean is a 55-year-Old woman who quite often crosses the Atlantic to visit her elderly mother. She tends to get swollen legs on these flights and is worried about her risk of developing deep vein thrombosis (DVT), because she read quite a bit about this in the newspapers lately. She asks you if she would wear elastic stocking on her next trip to reduce this risk.

- ☑ P = a 55-year-old woman who gets swollen legs on long flights
- ☑ I= wearing elastic stocking
- ☑ C = not wearing elastic stocking
- ☑ O = risk of developing deep vein thrombosis

⊙ A 35years-old female presents with a chief complaint of bleeding gums. She found out that she is pregnant last week. She is taking prenatal vitamins and sucks on crystallized ginger which she says relieves nausea associated with morning sickness. She has had sporadic dental care in the past. • Oral exam revealed calculus deposits, 4-6 mm pockets, bleeding on gentle probing— all signs consistent with a diagnosis of moderate periodontitis. • Patient read an online article which said gum disease may cause miscarriage and she is concerned since she lost her first baby two years ago at the beginning of the second trimester.

⊙ PICO

- ☑ P = Pregnant female
- ☑ I = Periodontitis
- ☑ C = No periodontitis
- ☑ O = Poor pregnancy outcomes

⊙ PICO question:

- ☑ In a patient with P, will I, as compared with C, O?
- ☑ In a pregnant patient, will periodontitis compared to no periodontitis, increase the risk of miscarriage (poor pregnancy outcome)?

⊙ What is the duration of recovery for patients with total hip replacement who developed a post-operative infection as opposed to those who did not within the first six weeks of replacement ?

- ☑ P = patients with total hip replacement
- ☑ I = post-operative infection within the first six weeks of replacement
- ☑ C = no post-operative infection
- ☑ O = duration of recovery

Example PICO Question:

Do type 2 diabetics (P) get better glycemic control (O) with exercise as the primary treatment (I) than those who get drug therapy as a primary treatment (C)?

- a. (P) type 2 diabetes
- b. (I) exercise
- c. (C) drug therapy
- d. (O) glycemic control

Background /Foreground questions

① Background Question:

- ☑ Asks for general knowledge about a disorder.
- ☑ Textbooks are good for answering background questions
- ☑ Their answers are “fibers of medicine”

☑ **Examples:**

- ➞ The causative microbiologic agent of disease
- ➞ A recommended dose of a drug
- ➞ A list of the attributes of syndrome

② Foreground Question:

- ✓ Asks for specific knowledge about managing patients with a disorder.
- ✓ Journal articles are good for answering foreground questions.
- ✓ are those usually found at the cutting edge of medicine
- ✓ They are questions about the most recent therapies, diagnostic tests, or current theories of illness causation and prognosis
- ✓ These are the questions that are the heart of the practice of EBM

✓ Examples:

- Intervention or exposure
- A possible comparison intervention
- Outcomes of interest

Selection of suitable bibliographic databases

- It is best to start with a broad database that is likely to include a significant number of papers.

○ What is a Website?

- ✓ An internet site and an information resource on the World Wide Web. Websites may provide information on any topic.
- ✓ Examples: Yahoo, Guidelines Websites etc



- What is a Database? A Database is an organized collection of information records that can be accessed electronically e.g. Medline ,Cochrane etc



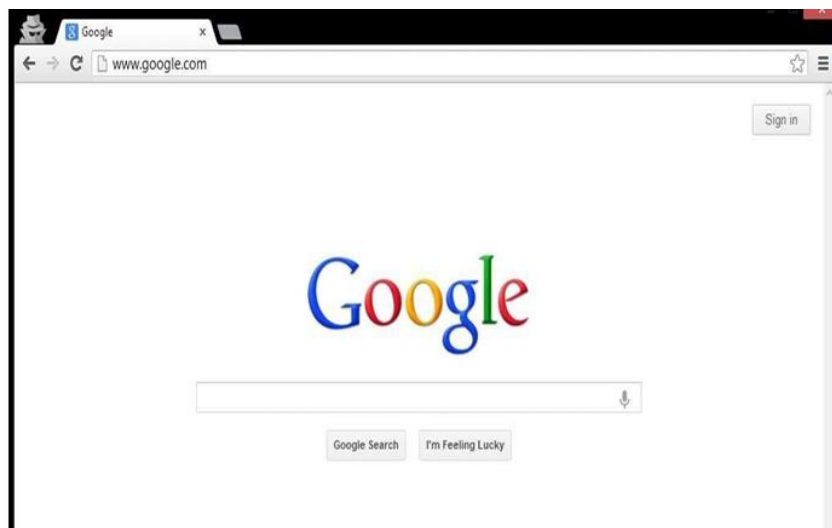
- ⊙ MEDLINE is probably the most widely used database searching for life sciences and biomedical information.
- ⊙ It includes bibliographic information for articles from academic journals covering medicine, nursing, pharmacy, dentistry, veterinary medicine, and healthcare.
- ⊙ It is maintained by the National Library of Medicine, USA

⊙ What is a Search Engine?

- ☑ A web-based computer program that allows users to **electronically search** and retrieve specific information online.
- ☑ It **searches documents and databases** for specified keywords and returns a list of the documents where the keywords were found.
- ☑ Internet search engines help users **find web pages on a given subject**. It may be:

➤ **General:** e.g. Google, Yahoo, etc

➤ **Specialized:** Google Scholar, Pubmed



Yahoo, or Yahoo.com, is a web services provider that offers both a search engine and a directory of World Wide Web pages

YAHOO! SEARCH

Web | [Images](#) | [Video](#) | [Local](#) | [Shopping](#) | [more](#) ▼

Web Search

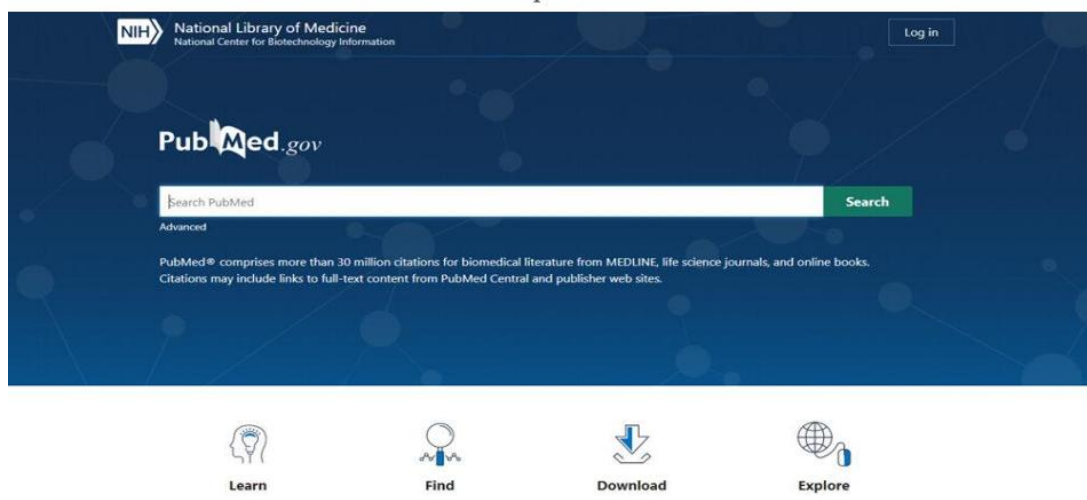
[Advanced Search](#)
[Ad Programs](#)

[\[Show Mail\]](#) - [\[Show News\]](#)

[Search Preferences](#) - [Search Services](#)



PubMed is a free search engine accessing primarily the MEDLINE database of references and abstracts on life sciences and biomedical topics



PubMed (www.pubmed.gov)

- ⊙ Is international in scope.
- ⊙ Is updated regularly.
- ⊙ Is freely available to anyone 24/7 on the Internet.
- ⊙ Covers fields of medicine, nursing, dentistry, veterinary medicine, pharmacology, health care system, and allied health.
- ⊙ However, PubMed coverage on some topics such as **clinical trials** has been shown to be relatively poor.
- ⊙ **Bookshelf** is a component of PubMed. It is a full-text archive of books, reports, databases, and other documents related to biomedical, health, and life sciences

Types of Literature

- ① Primary (Original)
- ② Secondary (Pre-appraised)

Primary (Original)

Research publications e.g.

- ① **Pubmed**
- ② **Embase**: it is little used in most **nonteaching institutions** because of **its cost**. Its major emphasis is on *pharmacology and toxicology*.
- ③ **CINAHL**: Although produced primarily *for nursing and allied health* practitioners, this database can be useful for physicians and surgeons when questions about *alternative therapies or rehabilitation techniques* arise

New Search | Publications | CINAHL Headings | Cited References | More ▾

Searching: CINAHL | Choose Databases >

☒ Suggest Subject Terms

in

and in

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Basic Search | Advanced Search | Visual Search | Search History/Alerts | Preferences >

Search Options

Search modes ?

- ☒ Boolean/Phrase
- ☐ Find all my search terms
- ☐ Find any of my search terms
- ☐ SmartText Searching [Hint](#)

Limit your results

Linked Full Text ☐

Abstract Available ☐

Published Date from Month Year: to Month Year:

Secondary Literature

- ⊙ Pre-appraised = The Secondary Literature
- ⊙ Useful for point-of-care searches
- ⊙ **Two types of pre-appraised databases:**
 - ✓ Those with pre-appraised **Synthesis of studies** e.g. Guidelines and Systematic Reviews
 - ✓ Those with **pre-appraised Individual studies**: Critically appraised Topics CATs
- ⊙ **Research publications e.g.**
 - ✓ **Systematic Reviews**: Cochrane Library, PubMed
 - ✓ **Guidelines websites**: Guidelines Clearinghouse, Guidelines International Network
 - ✓ **CATS**: BestBets, ACP Journal Club
 - ✓ **Point of Care**: Clinical Evidence, EvidencePlus, UpToDate etc

Cochrane Database of Systematic Reviews

- ⊙ The Cochrane Database of Systematic Reviews (CDSR) is the leading journal and database for **systematic reviews** in health care. The CDSR includes Cochrane Reviews (**systematic reviews**) and protocols for Cochrane Reviews as well as **editorials and supplements**



National Guideline Clearinghouse (NGC)

- ⊙ a database of evidence-based clinical practice **guidelines** and related documents. The NGC aimed to provide physicians, nurses, and other health professionals, health care providers, health plans, integrated delivery systems, purchasers, and others an accessible mechanism for obtaining objective, detailed information on **clinical practice guidelines** and to further their dissemination, implementation, and use.



MCQs

1) Which of the following is an important item of asking clinical questions?

- a) Identify the problem of the patient
- b) Identify patient's gender
- c) Identify the duration of the outcome
- d) Identify cost of the intervention

2) All of the following questions are foreground except:

- a) Intervention or exposure
- b) A possible comparison intervention
- c) Causative agent
- d) Outcomes of interest

3) 55 year old female attend your clinic for asking about a replacement therapy for the postmenopausal syndrome. She has heard about non hormonal replacement therapy and asks you whether this treatment option that decreases the postmenopausal symptoms and its effect on breast cancer..

How can this clinical problem be translated into a searchable format?

Section 3 – EBM (critical appraisal)

What is validity? (Closeness to the truth)

Internal validity

- Study design .
- Sample size.
- Blinding .
- Randomization.
- Appropriate statistical techniques.

External validity

- Generalizability of results .
- Population selection .
- Duration of follow up.
- Adverse effects.

Critical Appraisal tools

- ⊙ **CONSORT:** Consolidated Standards of Reporting Trials (Title, Abstract, Introduction, Methods, Results & Discussion).
- ⊙ **Cochrane Collaboration tools:** items for quality assessment such as: Study aims, justification, Methodology used, Sample selection, Method of randomization & allocation blinding.
- ⊙ **The AGREE instrument:** assess methodological quality of Clinical Practice Guidelines.
- ⊙ **CASP Checklists:** Critical Appraisal Skills Programme

AGREE instrument

DOMAIN 1. SCOPE AND PURPOSE						
1. The overall objective(s) of the guideline is (are) specifically described.						
1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
Comments						
2. The health question(s) covered by the guideline is (are) specifically described.						
1 Strongly Disagree	2	3	4	5	6	7 Strongly Agree
Comments						



1) A critical appraisal of a RCT takes into consideration one of the followings

- A- Randomization
- B- Blinding
- C- Precision of the estimate (CI)
- D- Benefice versus harm • E- All of the above

2) What is meant by "randomization"? (Select the one best answer.)

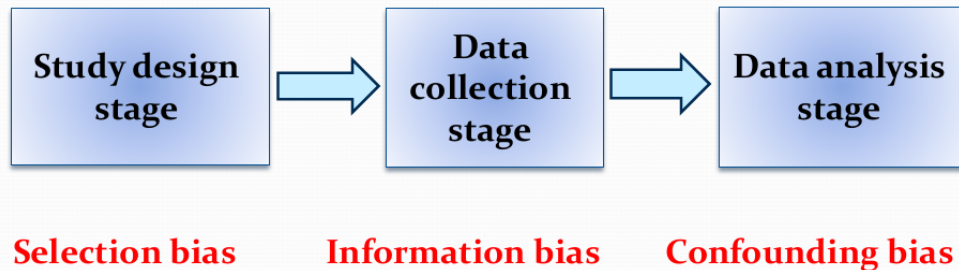
- A. Selection of subjects at random.
- B. Randomization is a method of allocating treatment such that each subject has an equal chance of receiving any of the possible treatments.
- C. Regression to the mean is a common phenomenon in clinical trials.
- D. Biases introduce random outcomes.

3) what does external validity mean?

- a) The study gives proper conclusion
- b) The study results are similar to other studies
- c) The study results can be generalized
- d) The study results give prove for the study hypothesis

Types of bias

- Several types of bias exist in research.
- By klinbaum et al



Scenario 1

- ⊙ A TV show host asks his viewers to visit his website and respond to an online survey about certain health problem.
- ⊙ What is the type of bias would you expect to be present in this study?

Sampling bias /self selection bias

- ⊙ As volunteers tend to be more health conscious than the general population
- ⊙ Online survey.....exclude non users of internet

Scenario 2

- ⊙ Suppose you are surveying high school English students. You ask them to rate the books they read throughout the academic year, but you make participation optional. What is the type of bias here?

Self selection bias

- ⊙ As a result, your sample will comprise mostly those with strong opinions (strongly enjoyed or hated the books)and will not be representative of all students. By allowing students to choose whether to participate, you have allowed self-selection bias to occur

Scenario 3

- ⊙ During a study about the effect of patient education on alcohol cessation, a number of participants drop out and fail to complete the education program or the follow-up surveys. After checking the baseline survey data to compare those who leave against those who remain in the study. According to the data, participants who leave consume significantly more alcohol than participants who stay. What is the type of bias here?

Attrition bias (loss to follow up)

- ⊙ Rule of thumb that 20% poses serious threats to validity. But keep in mind that even small proportions of patients lost to follow-up can cause significant bias

Scenario 4

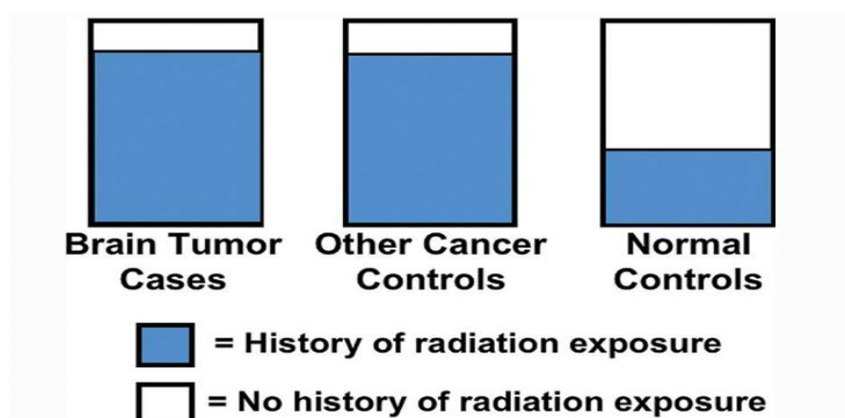
- ⊙ A study conducted in a high-income country about the prevalence of breast cancer in its population then it was repeated in another middle to low income one. The researcher found higher rate of breast cancer in the richer population compared to the poorer one. What type of bias demonstrates that difference?

Ascertainment bias (diagnostic access bias)

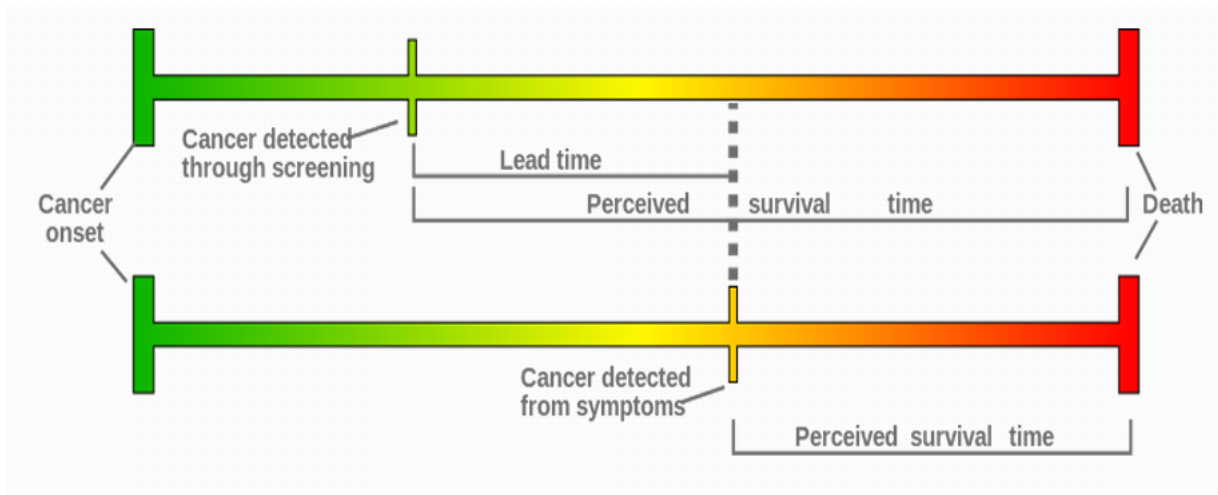
- ⊙ Another examples: Covid 19 kits availability

Information bias

Recall bias



Lead time bias



Scenario 1

- ⊙ RCT studying haloperidol in gastroparesis, a number of alternative antiemetics and analgesics such as morphine and ondansetron were also used, and the amount of these interventions was different between the two groups.
- ⊙ What is the type of bias in this study?

Co intervention bias

- ⊙ As it is unclear whether the demonstrated reduction in pain and vomiting was only due to haloperidol, or all the other medications.

Scenario 2

- ⊙ In a case control study about the association between drug use during pregnancy and birth defects in newborns. Mothers of children with birth defects are likely to remember drugs they took during pregnancy differently than mothers of normal children.
- ⊙ This type of bias is called.....

Recall bias

Scenario 3

- ⊙ A study about hand washing compliance among medical staff. The researcher collected his data during their working hours using observational check list. He found that the staff compliance when they were being watched was 55% greater than when they were not being watched.
- ⊙ What is the type of research bias do you expect to be present in this study?

Hawthorne effect (attention bias)

Scenario 4

- ⊙ Woman A went to a routine breast cancer screening and was diagnosed with breast cancer at the age of 55. Woman B was diagnosed during a doctor's visit to investigate a sudden pain in her breasts at the age of 65. Both women started developing the disease at a similar time And also died around the same time if you compare both woman's medical records it seems like breast cancer screening has increased survival time from woman A by 10 more years.
- ⊙ What is the type of bias?

lead time bias

Scenario 5

- ⊙ A child suffering from certain condition may be more aware of parents or grandparents who suffered from the same condition, whereas unaffected children may either be unaware or forget their parents or grandparents had that condition.
- ⊙ What is the type of bias?

Family information bias

Examples of confounders

- ⊙ Suppose that one wants to investigate a causal connection between alcohol consumption and myocardial infarction.
- ⊙ Smoking is known to be a cause of this disease; alcohol intake and smoking are known to be correlated. Suppose that alcohol consumption is in fact not a cause of myocardial infarction.
- ⊙ In order to decrease the effects of smoking, one may stratify the subjects (both cases and controls) into smoking and non-smoking groups, and within each subgroup, look for an association between alcohol intake and myocardial infarction

A Ignoring smoking

Alcohol intake	MI	Control
Yes	71	52
No	29	48
Total	100	100

Odds ratio = 2.26 ($\chi^2 = 7.62$, $P = 0.006$ (2-sided)).

B. By smoking status

Alcohol intake	Non-smokers		Smokers	
	MI	Control	MI	Control
Yes	8	16	63	36
No	22	44	7	4
Total	30	60	70	40
Odds ratio	1.0		1.0	